Chr Chrmist & Pruggist NO.2213 VOL.XCVI SUMMER ISSUE JUNE 24,1922







THE

ANTISEPTIC and DISINFECTANT EXTENSIVELY ADVERTISED TO THE PUBLIC AND IN GREAT DEMAND.

MANUFACTURED BY THE PROPRIETORS OF

Wright's Coal Tar Soap

The Certificate of Merit of the Institute of Hygiene has been awarded for this preparation, the more important properties of which are summarised below.

WRIGHT'S LYSOL positively destroys micro-organisms and thus prevents the spread of infectious diseases. The measure of its efficiency has been ascertained by analysis to be approximately 2½ times as great as that of pure carbolic acid.

Under all conditions of climate WRIGHT'S LYSOL retains its potency, and, unlike many antiseptic solutions, does not gradually deteriorate by keeping.

A relatively small quantity of WRIGHT'S LYSOL suffices to prepare a considerable bulk of effective solution. An average degree of dilution is two teaspoonfuls to a pint of water. It is therefore economical and inexpensive in use.

WRIGHT'S LYSOL has an agreeable, wholesome odour and neutralises the harmfulness of decomposing animal and vegetable matter without giving off any irritating or objectionable fumes.

WRIGHT'S LYSOL dissolves readily in water in all proportions, and by means of the measure, supplied with each bottle, the exact amount of solution desired can be made without waste.

does not tarnish instruments, or cause injury to fabrics.

WRIGHT'S LYSOL is GERMICIDAL

WRIGHT'S LYSOL is PERMANENT

WRIGHT'S LYSOL is CONCENTRATED

WRIGHT'S LYSOL is DEODORANT WRIGHT'S LYSOL is SOLUBLE

WRIGHT'S LYSOL

4-oz. size P.A.T.A. Retail Wholesale 1/- ... 7/3 doz. 8-oz. ,, ,, 16-oz. ,, ,, 3/- ... 21/- ,,

32-oz. P.A.T.A. Retail Wholesale 4/9 ... 34/- doz. 7/6 ... 5/- each 12/6 ... 8/3 ,,

MANUFACTURED BY

WRIGHT, LAYMAN & UMNEY, LTD. SOUTHWARK, LONDON. S.E.I.



Chemist's Price List

Glaxo and Glaxo Malted Food

	Petail	Net Cost Per Dozen.	Special Net Terms per dozen for Glaxo or mixed parcels of Glaxo and Glaxo Malted Food.					
	Retail Price.		£6 Orders.	£12 Orders.	£25 Orders.	£50 Cash with Order.		
Standard Glaxo (Full- Cream)	1/6, 5-oz. 2/6, 10-oz. 4/6, 20-oz. 7/6, 36-oz.	14/5 24/- 43/2 72/-	14/1 23/5 42/2 70/2	13/8 22/10 41/- 68/5	13/4 22/2 40/- 66/7	13/- 21,7 38/11 64/10		
Glaxo Malted Food	1/3 tin 2/4 ,,	12/- 22/5	11/8 21/10	11/5 21/3	11/1 20/9	10/10 20/2		

Glaxo Malted Food to the net value of £5 will be supplied by the Authorised Glaxo Distributors at the £50 rate, and sent carriage paid if cash accompanies order. Special Net Terms for £25 and £50 orders apply only in England and Wales.

· SPECIAL LINES	Retail Price.	Net Cost to Retailer.			
Glaxo No. 1 (Half-Cream) Glaxo No. 2 (Three-quarter Cream)	•••			2/6 (10-oz.) . 3/- (12-oz.)	24/- per doz. 28/10 ,.

Glaxo Accessories

	Retail Price.	Net Cost.
 	1/6 in carton	13/6 per doz.
 	1/- ,,	9/- ,,
 	1/6 ,,	13/6 ,,
 	1/9 ea. or 3/- pr.	13/6
 	4d. each	3/- ,,
 	9¼d,	8/6 ,,
 	วโ	2/3 ,,
 	6.3	4/6
 	4.3	3/- ,,
 	1/	9/- ,,
		3/_
	13	0.4
	5.7	21
	0/6	7/6 each
		1/6 in carton 1/-

Notes for Retailers.

Glaxo Miniature Feeders are not supplied in separate cartons, but in special boxes containing two complete feeders. Chemists can obtain these boxes direct, in cases of urgency, at 2/6 each, postage included, by sending a postal order to Glaxo Sales Department.

Glaxo Teats are supplied in the following seven varieties:—Ordinary (1 Medium Square Hole), Fine Hole, 1, 3, or 5 Leechbite, Blind, and Premature.

The Glaxo Baby Book is only supplied direct from Glaxo House, and the terms quoted are for not less than

a quarter of a dozen. Single copies are despatched to Chemists by Glavo Sales Department for 1/- each, postage included.

Carriage is paid on Glaxo and Glaxo Malted Food, or on mixed parcels of these two lines, to the value of not less than £3 net; also on 3 dozen Complete or Spare Feeders, and on Glaxo Teats and Valves. The terms quoted for the Maternity Belt, Glaxo Baby Book, Baby Clothing Patterns, Knitting Directions, and Glaxo Recipe Book, include postage.

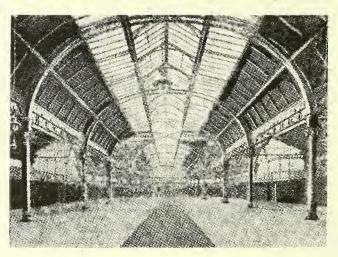
GLAXO (Sales Department) 56 OSNABURGH STREET, LONDON, N.W. 1.

Proprietors: Joseph Nathan & Co., Limited, London and New Zealand.

Have you booked your space yet

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If not you will be well advised to do so early, as more than half the available space is already booked.



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Write for plan, showing positions still available, and names of standholders up to date. Address all communications to-

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Carbolic Acid Crystals Cresylic Acid, all grades

ORTHO-CRESOL, 29/31° C. META-CRESOL, 60%, 75/80%, 98/100%

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Acetanilide

Coumarin

Phenolphthalein

Chloral Hydrate

Glycerophosphates

Graesser-Monsanto & Graesser-Monsanto & Graesser-Monsanto

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KILLS DISEASE GERMS

WE are placing on the market a new Disinfectant Fluid for the Home. "Carbocide" is the best, most powerful and most economical Disinfectant Fluid. It always affords generous profits to the retailer, but during the month of June we are making these two special Bonus

Offers, which can be obtained through Sangers, carriage paid.

A comprehensive Instruction Book is issued with each bottle or tin, and in order to assist the sale of "Carbocide" still further, we are advertising it in the press, and ofter new and attractive showcards and stereos for local advertising. These will be supplied free upon application to

Contents of No. 1 Offer— 4 Doz. 1/- size at 8/6 1 1/9 14/ ½ 4/9 38/ ½ 7/9 62/	£ s. d. 1 14 0 14 0 9 6 10 4	This will yield you:— 4 Doz. Bottles at 1/- each 1 " " 1/9 " 2 " Cans " 4/9 " 3 " " 7/9 "	£ s. d. 2 8 0 1 1 0 14 3 15 6
2½ per cent, Dis.	3 710 1 9	Three 1/- Bonus Bottles	4 18 9 3 0
TOTAL COST	3 6 1	TOTAL COST TOTAL PROFIT	5 1 9 3 6 1 1 15 8
Contents of No. 2 Offer—6 Doz. 1/- size at 8/6 2 1/9 14/ 14 14/9 38/ 14/9 38/ 14/9 62/	£ s. d. 2 11 0 1 8 0 9 6 15 6	This will yield you:— 6 Doz. Bottles at 1/- each 2 " " " 1/9 " 1 " Cans " 4/9 " 1 " 7/9 "	£ s. d. 3 12 0 2 2 0 14 3 1 3 3
2½ per cent. Dis.	5 4 0 2 8	Six 1/- Bonus Bottles	7 11 6
TOTAL COST	5 1 4	TOTAL COST TOTAL PROFIT	7 17 6 5 1 4 2 16 2

On condition that a Window Display (14 days) shall be made and showcards exhibited.

showing a clear profit of 55% on cost and 35% on selling prices.

The Retail Prices of these sizes of "CARBOCIDE" are protected under the P.A.T.A., and must not be sold below these fixed prices.

PHILADELPHUS JEYES & CO., LTD.
Manufacturing Chemists, NORTHAMPTON.



Mr. Carbocide

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Hovenden, R., & Sons, Ld. (Euxesis) 36 Howard Lloyd & Co., Ld. (Pills, &c.) xxxiii Hubbuck, T., & Son, Ld. (Oxide of Zinc) xx Huisking, C. L., Inc. (American Drugs) xxvi Hull Bottle & Glass Co., Ld 98 Hunters (Hauff Chemicals) xxxiii Hygienic Chemical Co. (Carded Powders, &c.) xxxiii Iddon, V. H., Ld. (Chip Boxes, &c.) xciv Isaacs, I., & Co. (Hygienic Feeders) lxxix Jackel et Cie (of Paris), Ld. (Hair Cream) 42 Jacko Dust Co 111 Jackson, E., & Co., Ld. (Fruit Pastilles) Ivii Jakson, J., & Co. (Mitcham Rd. 1921), Ld. (Ess. Oils) 27 Jackson, J. G., Ld. (Machinery) 110 James, Morgan W., & Co. (Ex. of Herbs, &c.) cii Jeffreys, Miller & Co., Ld. (Malt Extract, &c.) (xxiv) Jenner Food Co., Ld xcii Jeyes, Philadelphus, & Co. (Disinfectant) 4 Johnson & Sons (Mfg. Chts.), Ld. (Chemicals) xix Johnsen & Jorgensen Flint Glass, Ld. 101 Jones, A. (Liquid Face Powder) 34 Jones, Samuel, & Co., Ld. (Gummed Paper) Ixii Josephs, Philip, & Sons, Ld. 102, Col. Supp. Kalos (Liquorice) xvv Kay Bros, Ld. (Fly Catchers) xcviii Kaye, E. J., & Co. (Filters) xcviii Karfete T. & Co. (Ld. (Brushes) 64 Kerfoot T. & Co. (Filters) xcviii	Nestles (Feeding Bottle)
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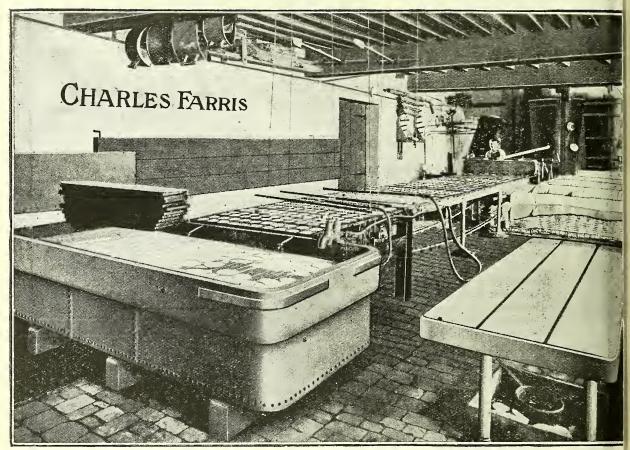
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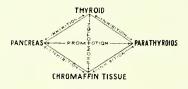
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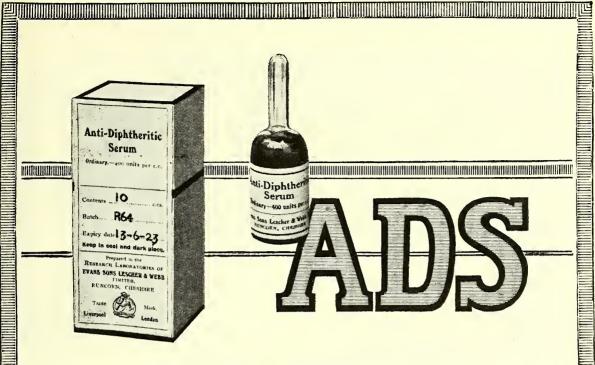
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SEDENT .:.	• • •	,,	3000 ,,		5/
SEDERUNT		,,	4000 ,,		6/6 ,,

HIGH POTENCY—"A" (700 units per c.c.).

SEDATE		Vials o	f 2000 units	•/•	4/6	,,
SEDGE	4.00	,,	4000 ,,		7/-	,,
SEDIGITATE	•	,,	6000 ,,		9 -	17
SEDILIA			8000 .		10/6	

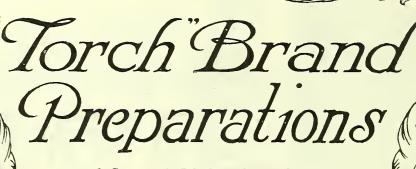
HIGH POTENCY "B"-(1000 units per as)

	HIGH	FU	ENCI	D.	(1000	units per	C.C.).	
SEDITION	•••		Vials of	2000	units		5/-	,1
SEDUCE			**	4000	, ,,		7/6	,
SEECAWK			,,	6000	**		9/6	"
SEDUM				8000			11/6	

PREPARED UNDER MEDICAL DIRECTION IN THE BACTERIOLOGICAL AND RESEARCH LABORATORIES.



EVANS SONS LESCHER & WEBB LTD



A Series of Medicinal and Toilet Preparations of the highest quality of British origin and manufacture.

ON THE P.A.T.A.

Bark and Phosphorus Tonic Bottles, 1/6 retail, 10/- doz. Brilliantine, Solidified Tins. 1/3 retail, 10/- doz. Cascara, Glycerinated 2 oz., 4 oz., 1/3, 2/- retail, 9/-, 15/- doz. Chemical Food (Fruit Flavoured)
4 oz., 8 oz., 16 oz., 1/3, 2/-, 3/6 retail,
9/-, 14/-, 24/- doz.

Coconut Oil Shampoo Bottles, 1/6 retail, 12/- doz.

Cod-Liver Oil 4 oz., 8 oz., 16 oz., 1/-, 1/6, 2/6 retail, 6 9, 9/-, 15/6 doz.

Cod-Liver Oil Emulsion 4 oz., 8 oz., 16 oz., 1/3, 2/-, 3/6 retail. 10/-, 15/-, 27/- doz.

Embrocation, Universal 3 oz. 8 oz. (cartoned), 1/3, 2/- retail, 9/-, 15/- doz.

Glycerin of Thymol Compound oz., 8 oz., 1/3, 2/- retail, 8/6, 13/- doz. Hair Tonic

Sprinkler Bottles, 6 oz., 2/6 retail, 18/- doz. Liver Saline

8 oz., 1/9 retail, 12/6 doz.

Malt Extract 1, 1, 2, 4, 7 lb., 1/1, 1/8, 3/., 5/9, 9/- retail, 8/6, 13/6, 23/6, 45/-, 71/- doz

Malt and Oil (15°) 1, 1, 2, 4, 7 lb., 1/2, 1/9 3/2, 6/-, 9/6 retail, 8/9, 14/-, 24/6, 47/-, 74/6 doz.

Nasal Balm Enamelled Tubes. 1/- retail. 6/6 doz.

Perfumes, Concentrated 1/9 glass tubes (1 doz. show outers), 14/- doz. 3/- " (\$\frac{1}{2}\doz. ", ") 24/- doz.

Petroleum Emulsion
4 oz., 8 oz., 16 oz., 1/3, 2/-, 3/6 retail,
10/-, 15/-, 27/- doz.

Saline, Effervescent Bottles, 1/6 retail, 11/6 doz. Sugar of Milk 1 lb., 1 lb., 1 lb., 1/2, 2/-, 3/6 retail, 8/-, 13/6, 25/- doz.

Syrup of Figs, Compound 3 oz., 6 oz. (cartoned), 1/3, 2/3 retail, 9/6, 16/- doz.

Syrup of Hypophosphites Comp. 4 oz., 8 oz. (cartoned), 1/9, 3/- retail, 13/6, 22/6 doz.

Warming Liniment

COMPLETE LIST ON APPLICATION.

"Torch" Brand Products are subject to 5% off invoice to the Retail Trade, on all direct orders to the value of £10 and upwards in one consignment, exclusive of the cost of packages. "Torch" Brand Malt Extract and Malt and Oil is not included in this arrangement.

Allen & Hanburys Ltd. Bethnal Green





HOLIDAYS and the SPORTS SEASON

SHOULD BE TIME FOR BIG

In town, country, or by the sea there is enormous CHEMIST extra business only waiting to be catered for. Little aids to the enjoyment of strenuous days—protective ideas against exertion or overstrain—palliatives for the over-zealous—dainty and cheap apparatus for the bather and swimmer, and all the replenishing of the dressing-bag and toilet-table which gives the first joy of the annual holiday, particularly to the ladies, and (in a whisper) also to the men.

WRIST STRAPS

(Solid Hide)

for Ladies or Gentlemen.

Attractive, serviceable, and "quite the thing." Well displayed on cards in the following assortment:

No. 2. Lined, buckle.
 No. 3. Thin leather, 2 buckles.
 No. 6. Suede assorted, 1 buckle, loose strap.

No. 7. Stout, 1 buckle, twice round pattern.

1 No. 9. Anatomical, 1 buckle, special feature for wrist bone.

Sample card, 4/6. Two cards, 8/6.

WATER WINGS

(Each in Envelope)

A line which increases in popularity year by year. Well made, reliable and attractive, readily bought by the swimmer as well as the novice because of the fun and enjoyment it gives.

"THE HOLIDAY"

Swimming and Water Wings.

Satin Finish.

Three-doz. lots at 15/3 doz. 15/6 per doz.

PAIN KILLING LINIMENT

is specially suitable during the sports season for over exertion, sprains, and a help to general fitness. A light application to tired limbs works wonders. No rubbing is necessary, and the pungent odour of oil embrocation is absent.

1/6 per bottle. P.A.T.A.

Wholesale - 144 - per gross.

SPLENDID DISPLAY MATTER AVAILABLE.

Special Packings for Export.

Prices on application.

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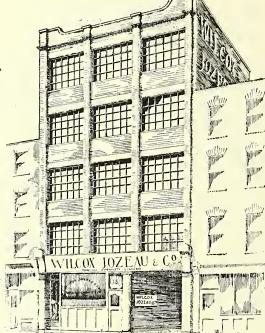
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WILCOX, JOZEAU & CO. have the pleasure to announce the removal of their OFFICES and WARE-HOUSE to larger and more convenient premises at-

15 GREAT ST. ANDREW STREET, W.C. 2.

ESTABLISHED 1882.

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RED BALL BRAND

Soluble Essences

HAVE A
WORLD WIDE
REPUTATION.



STEVENSON & HOWELL LTD.

STANDARD WORKS . SOUTHWARK ST . LONDON S.E.



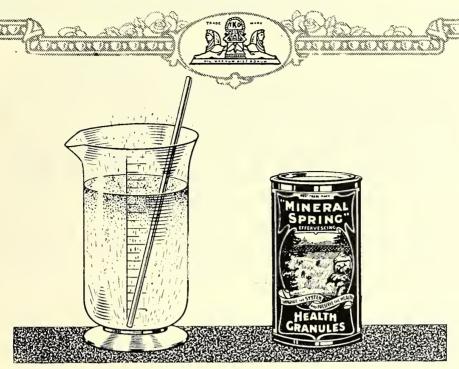
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Pure Essences Essential Oils & Colours

STEVENSON & HOWELL LTD. 95. SOUTHWARK STREET,







Make this personal test in your Pharmacy of the superiority of

"MINERAL TRADE MARK SPRING"

IX a glass of "Mineral Spring" and a glass of your next best saline. Note the longer effervescence of "Mineral Spring," its sparkling clearness and absence of "froth."

Taste the two beverages after the effervescence has subsided—taste them again five, ten, and fifteen minutes after mixing. The continued freshness of "Mineral Spring" will surprise you if you have never made this test before.

Compare them from any other points of view that occur to you—attractiveness, value to the public, value to the trade, keeping qualities—whatever your line of investigation you must ultimately arrive at one conclusion—the pre-eminence of "Mineral Spring."

In 1/- and 2/- tins (P.A.T.A. min.), trade prices 8/- and 16/- per dozen respectively.

THOMAS KERFOOT & COLUNG BARDSLEY VALE, LANCASHIRE, & Bardsley House, London, N.1 ESTABLISHED 1797.

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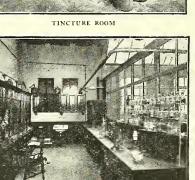
UNVARYING quality, quick and correct deliveries, and most reasonable prices have built up for us one of the largest drug businesses in the North—a business of which we are very proud and will do all in our power to conserve.

Rapidly-increasing sales to an ever-growing number of chemists have made necessary many extensions and additions to our plant, until to-day we have one of the largest, most modern, and most efficient drug manufacturing plants in North-East England.

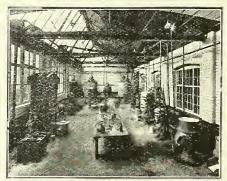
We invite your inquiries and orders. We know that we can satisfy you, for skilled pharmaceutical supervision at every stage of manufacture ensures that we offer only products of the very highest quality.

Glance at these photographs of some of the sections of our Drug plant. Are they not evidence that we can supply your every requirement, in any quantity you desire?





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For Drugs that are exactly right come to GOODALL'S

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It will be a handsome, well-illustrated catalogue replete with particulars of a fine range of Pharmaceutical Preparations, Toilet Requisites, Perfumery, Veterinary Preparations, etc.

Of particular interest will be the section dealing with Chemists' "Own Name" Specialities.

These are first-class goods—moderately priced and attractively packed—which mean increased goodwill as well as increased profits.

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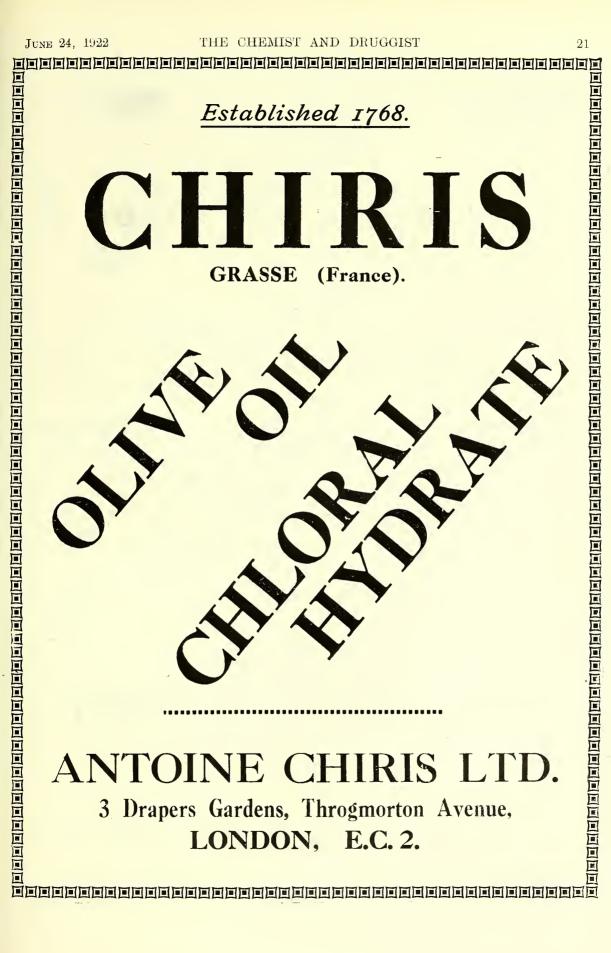
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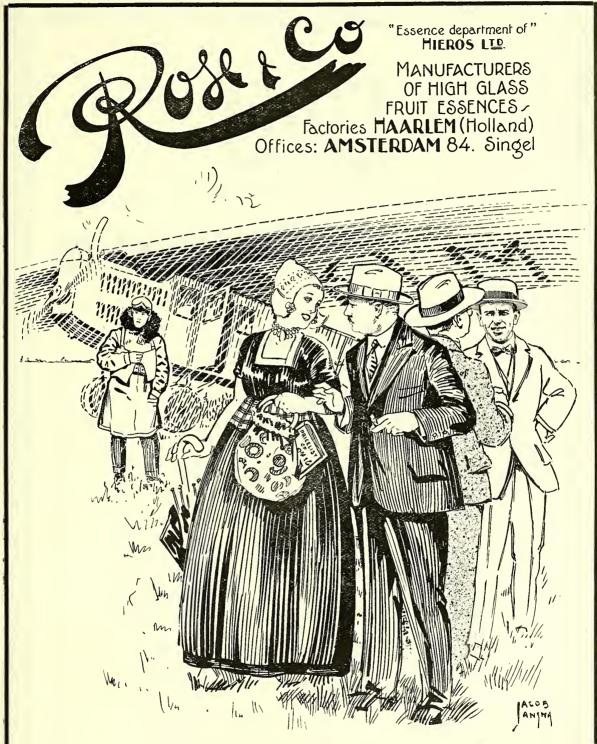
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Being given parting instructions by her Principals before stepping into the aeroplane for England. He guarantees the prompt despatch of all her orders and the purity, freshness and charm of ROSE © Co.'s Fruit Essences.

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GENUINE AMERICAN PEPPERMINT

we offer the three following grades

finest single distilled

redistilled BP

SUPERMENTHA multiple rectified

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GREEN EXTRACTS, DRIED LEAVES, JUICES,

NOW READY

BELLADONNA HENBANE HEMLOCK ACONITE FOXGLOVE,

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Our

Guaranteed a Pure Vegetable Colouring, Oil, Spirit or Water Soluble. Samples on Application.

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WILLIAM RANSOM & SON, LTD.

Manufacturing Pharmaceutical Chemists & Growers of Medicinal Herbs, HITCHIN

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Manufacturers of

Base Perfumery Products and Flower Oils.

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MUSK AMBRETTE c.p. 100°/.

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QUALITY & ECONOMY

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JAKSON'S

ESSENTIAL OILS OF

PEPPERMINT LAVENDER

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DEVON VIOLETS DEVON LILIES DEVON LAVENDER

Pharmacists would do well, before placing orders elsewhere, to investigate the selling powers of these very attractive perfumery products.

We should like to draw attention to the following letter which we have received from one of our Customers:

STEELE and MARSH,

Manufacturing and Dispensing Chemists, 6 MILSOM STREET, BATH.

MESSRS. W. J. BUSH & CO. Ash Grove, Hackney, London.

1st June, 1922

Gentlemen,

You will, I am sure, be very pleased to hear that the window containing Devon Violets, Devon Lilies and Lavender Water took the first prize this week in the Bath Spa Attractions Week Competition, open to all trades

We arranged the window in a colour scheme, and made good use of the excellent show cards you sent, in addition to which we used some large Wicker Bottles which we had in stock. An interesting fact is, that we only spent a total of ll/- in connection with the display, as we decided not to use drapings.

The Judges awarded us 23 out of 25 points for "capacity to sell", 23 out of 25 points for "general attractiveness", 15 points out of 20 for "originality", 15 points out of 20 for "economy and simplicity", and 9 points out of 10 for "workmanship".

The window is proving a good seller, and has aroused a good deal of interest owing to the excellent taste displayed....

A gentleman who called in yesterday, who has been connected with the Drug trade for many years, stated that he considered it was one of the finest Chemists' windows he had ever seen in England....

Thanking you for the assistance you have rendered with the show cards,

We remain, Yours faithfully, (signed) DAVID A. EVANS.

Beware of Imitations!

W. J. BUSH & CO., LTD., Ash Grove, Hackney, London, E. 8

Proprietors of

POTTER & MOORE, Mitcham.

BUISSON FRÈRES, London.



Now Stocked by all the leading Wholesale Houses.

MINIMUM P.A.T.A. PRICES.

No. 1. Large Wickers 56/- each. No. 4. 6-oz. Square (in boxes of 3) 14/- each.

No. 2. Medium ,, 30/- ,,

No. 4. 0-oz. Square (in boxes of 6) 8/9
No. 5. 4-oz. size (in boxes of 6) 4/9
No. 6. 2-oz. size (in boxes of 6) 15/- ,, No. 3. Small

No. 43. 1-oz. Watch Shape, with Sprinkler, 2/6 each. FOR FULL PARTICULARS OF TERMS AND DISCOUNTS APPLY TO-

R. J. REUTER 69 CARTER LANE E.C. 4

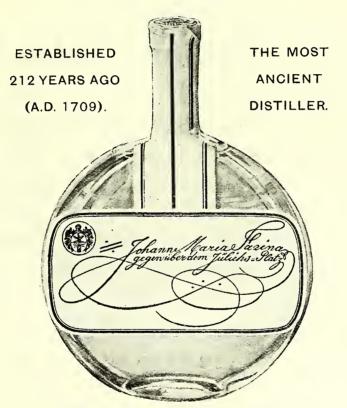


A Hundred New Customers for the asking! How a Sampling and Window Campaign can make 100 New Customers for you We are offering to every interested Pharmacia a forceful window scheme list the sheet of long the window scale in free and you have the additional advantage of a reasonable cental while using it. These showcards are supplemented by the sheet of large sheet is sheet of large sheet is wheth the large sheet of large sheet l

"THE GENUINE" EAU DE COLOGNE

OF

JOHANN MARIA FARINA, GEGENÜBER DEM JULICHS-PLATZ COLOGNE



New Watch Shape Bottle

2 oz.

35/9 per dozen, less discount.

BETTER PROFITS THAN ANY OTHER BRAND.

PRICES:

No. 0—Watch Flasks (2 oz.)... 35/9
No. 1—Short White Bottles(2 oz.)... 35/9
No. 2— ,, ,, (4 oz.)... 69/No. 3—Double White ,, (8 oz.)... 136/CARRIAGE PAID

Per Doz.

No. 4—Small WickerBottles(6 oz.)... 103/9
No. 5—Medium ,, ,, (12 oz.)... 206 6
No. 6—Large ,, ,, (24 oz.)... 413 -

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8 LAURENCE POUNTNEY HILL : : LONDON, E.C.4.

1,740,000 coupons will be valid for Free Tablets. They will be cut from the

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Issue of July 14th

It is an oversight if you haven't had particulars of the

Million Tablet Scheme

Write at once for full details—it means new customers for you.

The coupon on a full front page advertisement of the Daily Mail for July 14th will entitle you to give one tablet of Palmolive Soap free with every one purchased. We will replace it and you will gain new customers.

If you have already had our folder, order form, etc., do not fail to get

your supplies at once. We will put your order through any Wholesale House you desire or will send direct.

The Palmolive Co (of England), Ltd., 13-14, Gt. Sutton Street, London, E.C. 1.



FOLDING CARDBOARD BOXES

A few samples of Folding Boxes designed, lithographed, and manufactured at our works.

We specialize and are fully equipped with the latest machinery for the rapid production of large or small quantities of High-class Cartons.

FOR ALL TRADES



WE INVITE YOUR ENQUIRIES.

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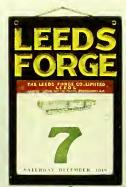
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A few examples of Calendars executed by BECK & INCHBOLD, Ltd., Basinghall Street, Leeds. A Calendar is one of the best Advertising Mediums that can be adopted, providing it is fitted with a bold date figure. Our experience tells us that the most popular is the Daily Date. Once a Calendar has been "hung" by one of your customers, the space on his wall automatically becomes yours if you are careful to see that a new Calendar is sent on completion of the old one, and the value to you of a quantity of "free hoardings" must be apparent.

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The ideal TRANSPARENT wrapping material for Soap, Perfumery, Drugs, Tablets, Bath Crystals, Sponges, Lamb's Wool Puffs, Articles of Toilet, Sweets, Provisions, etc., etc.

"Cellophane" is NOT Gelatine but PURE CELLULOSE or artificial silk, harmless, ABSOLUTELY air, grease and odour proof, UNAFFECTED by cold, heat or moisture, and STERILISABLE.

Will keep your Goods, Boxes, Bottles and delicate Labels, CLEAN on the Counter and in Shop Windows. Can be had colorless, coloured and embossed.

- "Cellophane" LABELS printed in gold and color.
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IMPORTANT: A great variety of articles of Toilet, Perfumery, Confectionery, etc., wrapped in Cellophane, can be seen at our Showroom where we shall be pleased to demonstrate the many applications, advantages and possibilities of our material.

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Now packed in Ilb. and $\frac{1}{4}lb$. Cartons.

Samples and Prices on application.

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Toilet Soap Manufacturers,

White Windsor Soap Works, PRESTON







CHICAGO HAIR DYE

Do you know where to obtain?

MADE IN FIVE SHADES.

A NEW LINE. LAGOON "SPONGE-LIFE"

Cleans Sponges instantly. No Hot Water required. GOOD SELLER. GOOD PROFIT. PROVED REPEATER. Sells at 6d. 3 dozen cost 1 1/3, post free.

Apply for free showcard and packet. BUXTON HOT-SPRING SALTS CO., 4 Cavendish Circus, Buxton SPECIAL OFFER OF GENUINE NEW GILLETTE BLADES

Sample packet sent for 2/10 boxes at 35/- per box.

PER BOX
POST PD.

Send for Illustrated Catalogue. Dozens of good lines. LOUIS J. STAMBOIS (Dept. I), 34 CALL LANE, LEEDS

AMOS JONES' OLD DRURY WET WHITE-

THE FAMOUS LIQUID POWDER FOR THE ARMS, NECK and SHOULDERS

Invaluable for the Stage, Evening and Fancy Dress.

APPLY TO YOUR WHOLESALER, OR DIRECT TO-Sole Agent for Australasia-H. E. BAILEY, P.O. Box 366, MELBOURNE. 18 GRAPE STREET, W.C. 2.



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Minimum trade profit of $33\frac{1}{3}$ % on selling prices. Additional bonus on many lines on orders for six dozen and over.

A good and persistent advertising campaign in the fashionable papers.

On orders of £10 and over, your name and address printed on Sachets and Petales de Roses (our patent). Most up-to-date advertising showcards, electric signs, testing samples, etc., free.

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A. S. LLOYD'S EUXESIS

(THE GENUINE).

For Shaving without Soap, Water, or Brush.



ENTREED AT STATIONERS' HALL.

A. S. LLOYD'S EUXESIS

FOR SHAVING

WITHOUT THE Use of SOAP or Water.

DIRECTIONS FOR USE.

Unscrew the cap at the top, and gently press the broad end, always taking care to do so from the bottom, by which the tube is rendered perfectly air-tight; when enough is obtained apply it to the beard either with a small soft brush or the finger, rubbing it a little; then apply the razor, and although but little of the Euxesis be seen on the face, the beard will be removed with the greatostease and comfort. It will be found very beneficial to wash before shaving. It is not intended to make a lather like soap. When the tube is not muse, besure to screw on the cap again.

Sold in Collanvible Tubes at 1s, 6d, and 3s. Sold in Collapsible Tubes, at 1s. 6d. and 3s. By the Original & Sole Manufacturer & Proprieto:

91 TO 95, CITY RD. FINSBURY, E.C. OXFORD ST. W. LONDON, ENGLAND, house Street. Late 27, Glass-PRICE, 1s. 6d

Sold by all Perfumers and Chemists throughout the World.

R. HOVENDEN & SONS having purchased, under an administration suit, the Business of the late A. S. LLOYD, with the Receipt, Trade-Mark, and Goodwill of the celebrated Euxesis, the Trade are cautioned that the original and genuine Euxesis is now manufactured at our Factory ONLY and may be obtained at either of our Warehouses.

PRICES ON APPLICATION.

NOTICE.—THE GENUINE A. S. LLOYD'S EUXESIS bears a label printed in BLACK only on a Yellow ground, with our Trade Mark at the bottom, as Illustration.

Proprietors: R. HOVENDEN & SONS, LTD. LONDON: 89-95 City Road, E.C.1; [and 29-33 Berners Street, W 1



£500 TRADE Competitions

EXTENSION FOR ONE WEEK ONLY

The De Luzy Competitions, both to the Trade and to the Public, have met with remarkable response. Especially during the last few weeks have sales quickened and orders poured into the firm.

Many Chemists throughout the country, and many who have attended the recent Exhibition, have urgently requested us to extend the Competition period. In order to meet their demands and to bring the Trade Competition into line with the Competition to the Public, we have decided that

All Chemists are Eligible who post an Order—or Request for Coupon—to us before June 30,

and we are prepared to consider all Trade Competition Entries reaching us on or before July 8.

We cannot extend the Competition beyond this date—so speed up, Chemists! Send in your requests to-day, and have as much time as possible to consider your DE Luzy proposition before July 8.

Ceme. Poudre ex Parlams

General Manager: W. H. CALNAN 3 LONDON WALL AVENUE, E.C.2.

Telephone: WALL 9966.

A. S. LLOYD'S EUXESIS

For Shaving without Soap, Water, or Brush.

CAUTION to the TRADE

Labels on the genuine EUXESIS not only bear signature of A. S. Lloyd in Black Ink, but also

- "Prepared only by his Widow and signature of
- 'Aimee Lloyd'" in RED.



Sole Manufacturers and Proprietors:

AIMÉE LLOYD & Co.,

23 PANTON STREET (Formerly named SPUR STREET),

HAYMARKET, LONDON, S.W.

N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).

Soudre Nilde

in the sifter box

THE only powder in a practical sifter box, Poudre Nildé is the quickest seller in your shop. And quick sales mean large profits.

The combination of a perfect face powder and the practical sifter box is irresistible. That is why Poudre Nildé is in demand all the year round—bringing you new customers who buy, not only Nildé preparations, but other goods as well.

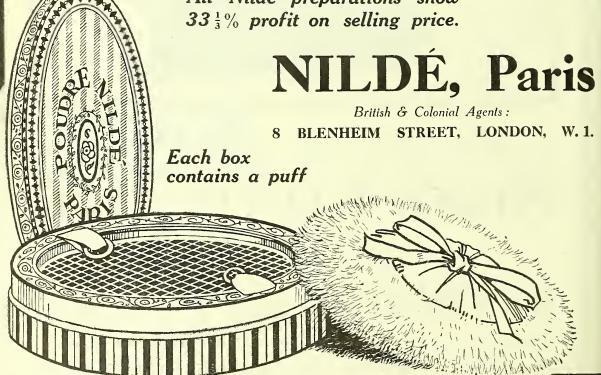
We do not ask you to do all the selling. Poudre Nilde is so widely recommended and so consistently and forcefully advertised, that it is already half-sold when it reaches you. It pays to display Poudre Nilde in your window and on your counter.

Made in six shades—Rachel, Naturelle, Blanche, Rose, Basanée and Indienne.

Handbag size, 1/-; medium, 2/-; large, 3/6.

Leather or fancy embroidered Vanity Cases with mirror in lid. Small size, 5/-: medium, 7/6; large, 10/-

All Nildé preparations show 33 ½ % profit on selling price.



Four Quick-Selling NILDÉ LINES

THESE four Nildé preparations are as familiar to the public as is Poudre Nildé. Each stands in a class by itself; each has some distinctive feature that commends it to the woman who buys toilet preparations.

Rouge Invisible Nilde-rouge in powder form—is put up in the same neat, practical sifter box as Poudre Nildé. It can be applied to the complexion at any time—anywhere. Made in two tints, brune and blonde, it cannot be distinguished from natural bloom.

Creme de Beauté Nildé—non-greasy and delicately perfumed—can be used either as a day or night cream.

Savon Nildé—the creamy lather soap—is specially recommended for delicate skins and is economical in use.

Nildé Lip Salves — white, natural red (rouge des lèvres) or bright red (carmin des lèvres) - prevent dryness of the lips and protect. them from wind-smart or frost-bite.

Like Poudre Nildé, these Nildé preparations are already half-sold before they reach you. Your customers know that anything that bears the name Nildé can be relied on.

Display Nildé preparations in your window and on your counter—and they sell themselves. They turn over quickly—give you a good profit, and speed up sales all round.

> All Nildé preparations show $33\frac{1}{3}\%$ profit on selling price.

Rouge Invisible Nildé

In the sifter box with puff.

Brune or Blonde - 1/6



Savon Nilde

The Creamy Lather Soap, Price 1/-

Cartons containing 3 Tablets 3/-



Crème de Beauté Nildé

Blanche or Naturelle, 2/-

Large size, 3/-



Nildé Lip Salves

In elegant metal containers.

White - -

Rouge or

1/-Carmine - -



British and Colonial Agents:

8 BLENHEIM ST., LONDON, W.1.

owder Pu

Our creations in this line are acknowledged to be UNIQUE, and wherever shown they appeal to the lady of refinement because of their ORIGINALITY of design.

Our Novelties are packed singly in round fancy boxes, and bear our gold seal "ROSETTE" with device of basket of roses, which stands for Quality and High-class Workmanship. One dozen boxes are packed to the carton, which packing is most convenient for Shipping.

Manufactured throughout by BRITISH LABOUR in our own workshops under ideal conditions, our Powder Puffs are demanded practically the WORLD OVER.

Markets still open include The EAST, The UNITED STATES OF AMERICA and SOUTH AMERICAN STATES. We kindly invite enquiries from Merchant Shippers catering for these countries, confident that there need only be a few of our novelty puffs shown to create a large demand.

J. R. BOURLAT, GOES & CO.,

Manufacturing Specialists in Fancy Powder Puffs to the Wholesale & Shipping Trade ONLY, PRINCES ROAD, HOLLAND PARK, LONDON, W. 11,

Telephone Nos.: PARK 240 & 2592.

PURE ENGLISH **PEPPERMI**

Grown on my own farms.

£1000to Charity I will give £1000 to any Charity named by any person who can prove my Peppermint Oil to contain any adulterant or foreign Oil.

Inspection of Farms and Distilleries cordially invited.

Seymour's Distillery & Herb Farm, HOLBEACH. LINCS.

PAPIER POUDRE



British Made Goods.

Note our Trade Marks.

"LEHCARESOR."



Spurious Imitations.



PAPIER POUDRE, LTD., 46 Baker St., Portman Sq., London, W. 1.3

WHITE, ROSE or RACHEL Tints, 4d., 6d., 8d., and 1/4 size Booklets. 2/8, 3/9, 5/- and 10/- per doz. net, respectively.

A NEW LINE IN PAPIER POUDRÉ.

BOOK IN WHITE, ROSE or RACHEL TINTS, containing a neat Mirror. Price 1/-, at 7/6 per doz. net. This should make a good selling article. Sample Set in the three tints sent on application.

SUNBURN TINT, 8d. and 1/4 sizes only, 5/- and 10/- per doz. net.

NEAT MIRROR CASES, 1/6 ... 13/9 per doz. net. REFILLS to Mirror Cases in White, Rose or Rachel, 4d. ... 2/8 per doz. net. 8d. SHAVING PADS, for Use after Shaving (unscented), white only 5/- per doz. net.

POPPŒA ROUGE

A most popular line.

Made in booklet form. One size only, viz. 1/-, at 8/- per doz. net. Mirror Cases 1/6, at 13/9 per doz. Refills for same 6d., at 3/9 per doz. net.

PAPIER POUDRÉ, Ltd., 46 BAKER STREET, LONDON, W.1



One of our Customers says:

"We are always pleased to handle Evan Williams' Specialities for, amongst other reasons-

"We never get any complaints.

"They are quick sellers.

"You leave the retailer a good margin of profit."

The EVAN WILLIAMS CO., LTD., 18 & 18a, Ogla St., Foley St., LCNDON, W.1.

'Jackel's Cream



CREAM Trade Mark attached to each bottle.

(without Grease) for THE HAIR

Sold everywhere Established 1883. A she she she she she she

"Jackel's Cream" fixes the hair in any desired position; is unexcelled as a dressing and does not soil the headwear. It removes Scurf and Dandruff, keeps the scalp healthy, and promotes the natural growth of the hair while maintaining its softness and brilliancy.

歌歌歌歌歌歌 Prices for Wholesale and Export Houses on application.

Jackel et Cie (of Paris) Ltd., Sauchiehall Street, GLASGOW.

Stock! Stock!! Stock!!!





TRADE TERMS:

12/- doz. Retail at 18/-

From all Wholesalers.

Anzora Perfumery Co., Ltd. Willesden Lane - N.W. 6.

L. LEICHNER'S GREASE PAINTS, &c. Now to be obtained from your Wholesaler or direct from the Sole British Agents— VANITIES LIMITED 15a Whitcomb Street, Pall Mall East, W.C.2. PRICE LISTS ON APPLICATION. All lines in stock.

All lines in stock.



"A Line That Sells Itself."



Finest Quality Concentrated Perfumes made from natural flower oils in the following odours:—

PARMA VIOLET LILY OF THE VALLEY WALLFLOWER WHITE LILAC WHITE ROSE & SWEET PEA

Free from spirit. Supplied in High-Class Rod-Stoppered Hexagon Bottles.

Apply to-

RUVOIRE ET CIE, 154 Church Lane, Harpurhey, MANCHESTER.

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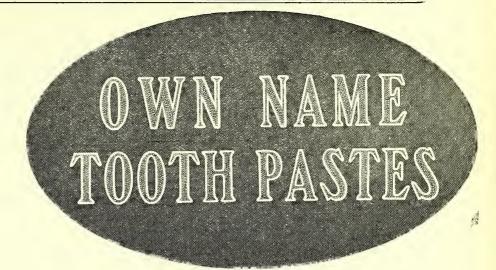
Forhan's Sales Increasing Steadily

A consistent national advertising campaign has been steadily building better business for clients who sell Forhan's For the Gums.

Are you getting your share of this increasing business? Your customers see these advertisements. Many would buy Forhan's from you if they saw it in your window, on your counter. Why not profit from these sales? If you do not already stock Forhan's For the Gums write to-day for trade terms and particulars.







You probably sell dozens of tubes of Tooth Paste each day. Do you always get the repeat Sales? If your business in this line is confined solely to the proprietary side, it is practically certain that your competitors are picking up profits that might have been yours. Make a big show of Your Own Name Tooth Paste and every repeat can only come to you.

Never a day goes by but we receive orders for Own Name Tooth Pastes. We make up the formula, private or stock, fill the tubes, print and make our own cartons. We have dozens of designs for you to choose from, or we will submit a special design for your own Pharmacy.

You can now have Your Own Tooth Paste in enamelled tubes or labelled tubes, whichever you prefer, and so meet all competition.



258 EUSTON RD., LONDON, N.W. I.



YOU WANT

and would keenly appreciate, a monopoly in respect of a good leading line for your district.

WE WANT

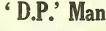
one chemist in every town, or district in large towns, to stock and push the sale of our

'DP'

THE
BRITISH
ANTI-FILM
DENTAL
CREAM

DOES WHITEN, POLISH, CLEANSE, AND PRESERVE THE TEETH AS NO OTHER DENTIFRICE CAN.

WE CAN-AND WILL-MAKE IT WORTH WHILE FOR ONE CHEMIST TO BE THE



FOR HIS DISTRICT.

> RETAIL PRICE

1/6 Large Tube.

TRADE PRICE

12/- per dozen.

Subject to Further Discounts.

10% 1-gross lots.

 $7\frac{1}{2}\%$ on 6-doz. lots.

5% on 3-doz. lots. Showing a

Showing a profit of over

50 %

Carr. Paid. Cases Free.

WRITE US-

THE SPA TOILET COMPANY,

Leamington Spa. Amami Products.

SALES PSYCHOLOGY.

WHEN SELLING

AMAMI SHAMPOO

SUGGEST

A M A M I SCALP STIMULANT

AS WELL.

2/6 retail.

10d. extra profit.

It's as easy as falling off a log.

MAMI, 4/10 Chenies St., LONDON, W.C. 1 (Opposite Goodge Street Tube Station).

As ORIGINATORS and MANUFAC-TURERS for many years of BATH SALTS (powder form) we are putting up in 4-oz. tins, nicely perfumed, with attractive labels,

Pompeii Bath & Toilet Salts

These Salts could be put forward as Chemists' own, makers' name not appearing, or it can be supplied in bulk. Prices low, showing good profit.

Sample tin supplied on application.

BATES & CO. 55 Sidmouth Street,

GRONDARD, MAISONNEUVE & CO.,

City 6358 - 47a Old Street, London, E.C.1.



Sole Agents for

R. FRANCK & CO.

BEST FRENCH MANUFACTURER

of

PERFUME SPRAYS,

cutglass, engraved FANCY MODELS.

SOLPORT'S POWDER PUFFS

IF YOU ARE NOT ALREADY
ON•OUR LIST OF REGULAR
BUYERS,

MAY WE QUOTEYOU?

IT WILL PAY YOU!

89 89 89

ILLUSTRATED LIST OF EVERY

KIND OF POWDER PUFF WITH

:: LATEST PRICES ::

FREE ON REQUEST.

ARE THE BEST



MADE IN OUR OWN FACTORIES IN LONDON, ENGLAND INDENTORS SHOULD SPECIFY "SOLPORT'S" IF THEY REQUIRE THE BEST.

SOLPORT BROTHERS LTD.

WHOLESALE AND EXPORT MANUFACTURERS

OF DRUGGISTS' SUNDRIES

184-190 GOSWELL RD., LONDON, E.C.1.

SPECIALISTS IN TOILET AND MANICURE SUNDRIES

AUGUSTUS SECTION OF THE OWNER OW

THE PROPERTY OF THE PROPERTY O



PERFUMED

BATH SALTS



3451



3568



3756

In Rounds, and Boxwood
Top Corks,
Capped and Ribboned.

		F	er doz.
8-oz		-	11/-
10 ,,	-	-	13/6
12 ,,	-	_	16/6
16 ,,	-	-	20/-
20 ,,	~	-	24/-
32 ,,	-	-	36/-
60 ,,	-	-	66/-

In Oak Veneer Packages.

		2	
		F	Per doz.
2-lb.	-	-	26/-
4 ,,	-	-	50 /-
7 ,,	-	-	90/-

Variegated Salts in Stoppered Bottles.

		Per doz.
20-oz.	-	- 30/-
30 ,,	-	- 40/-
40 ,,	-	- 50/-
$4\frac{1}{2}$ -lb.	_	- 96/-
8 ,,	-	- 132 <i>∤</i> -

Customers' names free on 3 dozen of a pattern, assorted sizes.

SHOWCARDS SUPPLIED.

Telephonel:
HOP 4170
(2 lines).

WILLIAM TOOGOOD LTD 77, SOUTHWARK ST

Telegrams:
"TOOGOOD,
BOROH,
LONDON."



REGISTERED TRADE MARKS

A PREPARATION POSSESSING THE TESTIMONY OF A MASS OF RESPONSIBLE SCIENTIFIC AND MEDICAL EVIDENCE OF EFFICIENCY.

Prepared under the directions and formula of

PROF. E. BUERGI, M.D.

FOR THE TREATMENT OF ANÆMIA CHLOROSIS AND WASTING DISEASES.

N.B. –for further particulars, &c. see overleaf.

A PREPARATION FOR THE TREATMENT OF ANÆMIA, CHLOROSIS AND WASTING DISEASES

(of whatever origin).

Clinical experiments have proved Phyllosan to be a potent remedy, reliable, prompt, with a profound and sure influence, producing a decided roborant and invigorating effect on the entire system, far superior and more efficient than iron or any other known preparation.

HIGHLY RECOMMENDED AND EXTENSIVELY PRESCRIBED BY THE MEDICAL PROFESSION THE WORLD OVER.

"A THERAPEUTIC AGENT, DEFINITELY ESTAB-LISHED, POSSESSING ENDLESS POSSIBILITIES.

(THE PRESCRIBER, APRIL, 1922).

EVIDENCE OF EFFICIENCY.

Reports on a series of Hospital cases under Phyllosan treatment, each case having previously been treated with iron, malt, cod liver oil, and other known remedies, without results. Within one month's treatment under Phyllosan remarkable and definite improvements were obtained.

Blood specimens of these cases were examined and reported upon independently by the Clinical Research Association, London.

- "THERE is at present no remedy in existence with the same efficiency as Phyllosan."
- "PHYLLOSAN is an unequalled regenerator, producing results unobtainable hitherto in any other substance."
- "PHYLLOSAN stimulates all vital and physical forces, which, so to speak, rejuvenates the patient."

Phyllosan is made up in tablets, supplied in bottles, retailed at 5/- per bottle. Obtainable through any Wholesale House in the British Empire.

For Literature, Copies of Clinical Reports, Trade Terms, and further particulars, communications should be addressed to:-

Chlorophyl & Chemical Corporation, Ltd., 26, Coventry Street, LONDON, W.I. Telegrams: Filosan, Piccy, London

Telephone: Regent 4363.

SCHWEITZER'S

TRADE COCOATINA MARK.

The most nourishing and digestible of all beverages.

The $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb. and 1-lb. tins are discontinued, and henceforth there will be only two sizes, to retail in Great Britain at 1/6 and 4/- each respectively.



Wholesale Terms to Retailers are as follows:-

Fixed Minimum Retail Prices.	Orders below £5 net, carriage forward.	Orders for not less than £5 net, carriage paid.	Orders for not less than £10 net, carriage paid.		
1/6 per tin	14/6 per doz.	14/- per doz.	13/6 per doz.		
4/- ,,	38/6 ,,	37/6 ,,	36/- ,,		

The smallest quantities we can supply direct are two dozen small size, or one dozen large size, in complete dozens.



WHOLESALE TERMS.

VIBRONA.

Cases containing one dozen £2 17s. net., carriage forward.

Cases containing two dozen £5 14s. net., carriage paid.

Cases containing three dozen £8 10s. net., carriage paid.

PACKAGES FREE.

Less than one dozen ... 62/- per doz. net., carriage forward.

The fixed retail price of VIBRONA is 6/- per bottle.



WHOLESALE TERMS

BRONAMALT.

Less than one dozen, 3/- size, 30/- per doz. net., carriage forward.

Cases of one dozen, 3/- size, 28/- per case net., carriage forward.

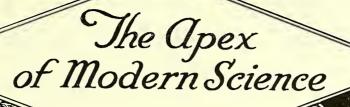
Less than one dozen, 5/- size, 49/- per doz. net., carriage forward.

Cases of one dozen, 5/- size, 46/- per case net., carriage paid.

PACKAGES FREE.

Orders for assorted sizes of not less than £5 value, carriage paid and packages free.

Sole Proprietors: FLETCHER, FLETCHER & Co., Ltd., Vibrona Laboratories, Holloway, LONDON, N. 7.



BRISTOWS Georgian Soap A Soap of Quality for Delicate Skins

In Bath and Toilet Sizes, also in 3 tablet boxes containing 1 Bath and 2 Toilet Tablets. The most refined and exquisitely perfumed Toilet Soap of the Century :

T.F. BRISTOW & Com LTD

London.

Perfumiers & Makers of Superfine Soap
from George III to George V.



A REMARKABLE ADVERTISING CAMPAIGN THAT BRINGS CUSTOMERS TO YOUR DOOR



EDWARDS' HARLENE, Limited

20, 22, 24 & 26 LAMB'S CONDUIT STREET, LONDON, W.C. 1.

is the recognised standard of value throughout the civilised world

With that fact in our minds we decided to market the famous Pears' Golden Series. We wished the containers of that Series to be an outward expression of the excellence of their contents, so we selected Gold.



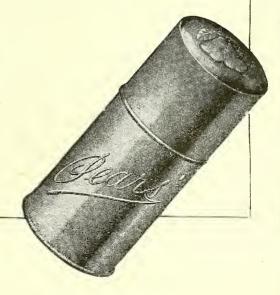
Pears' White Opaque SHAVING STICK

is one of Gears Golden Series.

IT sells again and again, where other sticks only sell once, because it is the perfected product of over 130 years' experiment and experience. You and your customers have the trief attention a guarantee of satisfaction.

Pears' Shaving Stick has been on the market a shorter time than most of its competitors, but it has leapt into first place in popularity because we waited until we were quite sure we had produced an article of supreme character.

A. & F. PEARS, Ltd., 71-75, New Oxford St., LONDON, W.C.1.



OINTMENT & TALCUM CONTINUOUS ADVERTISING CREATES BUSINESS— —THE WISE TRADER BENEFITS. A World-wide Reputation ensures Satisfied Customers. Write for New Agency List. Attractive Window Stands & Show Material. Sole Distributing Depot— FRANCIS NEWBERY & SONS, Ltd., LONDON E.C. 1.,

POPULAR





When you stock Silkodono and Shonpone you are assured of profitable and recurring sales. Demand has been fostered by extensive advertising in leading newspapers and magazines and by distribution of thousands of Free Samples.

Silkodono and Shonpone always give satisfaction to your customers as they do everything we claim for them and in addition represent particularly good value.

Not only do we give you very favourable terms on these two lines but to further aid your distribution we supply beautiful Showcards, Dummy Cartons, Handbills, etc., all free upon request. Why not have your share of these profitable sales?

SILKODONO BONUS TERMS for this Month.

1/6 SIZE Wholesale Price, 12/e per dozen.
2/6 SIZE
Wholesale Price, 20/e per dozen.
4/6 SIZE
Wholesale Price, 36/e per dozen.

6 Bottles extrs with orders for 3 dozen. Net Profit 27/- on Outlay of 36/-6 Bottles extrs with orders for 3 dozen. Net Profit, 45/- on Outlay of 60/-6 Bottles extra with orders for 3 dozen. Net Profit 81/- on Outlay of 108/-

SHONPONE BONUS TERMS for this Month.

Shonpone Sachet, wholesale 2/6 per dozen, to sell at 4d. each. We will supply as a trial order three dozen Sachets for 7/6, and Dainty include 6 Sachets absolutely free of charge and post paid. 4d. Sachet, Cartons to hold four Sachets will be sent on request. free of charge, sent for testing.

SILKS TOILET 8-9 Red Lion Street, HOLBORN, LONDON, W.C. 1.

SACHETS

for Washing the Hair

Shonpone Shampoo Sachets are creating a steady demand which it is well worth your while to cultivate. Its delicious perfume and refreshing effect after use will give it a world-wide popularity. Dainty cartons will be sent on request. These make effective Window Displays. If you would like to test the virtues of Shonpone yourself we will willingly send you a 4d. Sachet, FREE OF CHARGE.





The Original and Best

SOLID EAU DE COLOGNE

has many imitators but no equal.

Its elegance and utility appeal to all.

Made from the finest Eau de Cologne. Refreshing when rubbed on the forehead, pleasant as a smelling bottle, invaluable in a heated atmosphere and when travelling. A real acquisition to every household. Excellent after shaving. A boon to those in hospital.

RETAILS AT 3s. 6d. Minimum (P.A.T.A.) PER DOZEN 32/SPECIAL TERMS FOR BONDED SHIPMENT OF 4 gross minimum.

SOLID ENGLISH LAVENDER

Similar size and packing as "FROZOCLONE" but in BLUE glass.

TERMS AS FOR FROZOCLONE.



THE IDEAL FRUITY LAXATIVE

In Pastille form. Delicious, Reliable, Effective.

Retails at 2s. 3d. minimum. Per dozen 21/-

REDUCED PRICES FOR EXPORT.

Carnate NAIL POLISH PASTE PROLIES WAS THE PROLIES WAS THE PROLIES WAS THE PROLIES WAS THE PROLIES OF THE PROLIE

The Nail Polish

with new and distinctive features. Softens the cuticle. Brilliant polish,

Retails 1s. 9d. Per Dozen 15

R. DEMUTH'S LABORATORIES

68 Salusbury Road, and Montrose Avenue, LONDON, N.W. 6.



Three products that pay big dividends

To Chemists who handle them.

"Emdoin" preparations promote business by their wonderful efficacy, and the trader is additionally assisted by continuous and widespread publicity in the London and Provincial papers.

Emdoin Antiseptic Ointment. 5/- jar, 45/- per doz.; 3/- jar, 27/- per doz.

Emdoin Soap. 1/- per tablet, 9/- per doz.

Emdoin Shampoo Powders. 4d. each, $2/7\frac{1}{2}$ per doz.

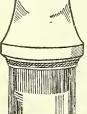
Manufactured by The Emdoin Co.—Offices, 29 Fetter Lane, E.C. 4; and can be obtained from the Wholesale Dis-tributing Agents, Sangers, 258 Euston Rd., London, N.W. I



ANTISEPTIC.



Gates' BOTTLE



Tel. Nos.: 53 & 3. Telegraphic Address: "Gates Hailsham."

"Mine

Mine beat all others."

The Cheapest and Most Effective Capping ever produced.

Snow-white OPAQUE and Coloured Rolled Skins

CAPPING

Used by all the Leading Drug and Perfumery Houses.

These Skins are Damp and READY FOR USE.

Absolutely as OPAQUE as Split Skins and equal in appearance.

GOLDBEATERS' SKIN for Medical Use. WHITE OPAQUE & TRANSPARENT **BAUDRUCHE CAPPING SKINS**

ESLIE GATES, HAILSHAM, SUSSEX.

C.MELIN&CO.

Established 1865

7 India Street, Crutched Friars, London, E.C.3.

AND CORKED

MEDICAL

PLAIN AND GRADUATED.

of every description

DIRECT FROM THE WORKS WHOLESALE AND EXPORT.

DEARBORN

-LIMITED

37 Gray's Inn Rd., LONDON, W.C.1.

Toilet Specialties	•	Prices per doz.	Selling Price
PILENTA SOAP. A complexion soap		to Retailer.	P.A.T.A. 1/-
PROLACTUM. For the lips		10/-	1/-
PARSIDIUM JELLY. For wrinkles		10/-	1/-
ALLACITE OF ORANGE BLOSSOM		22/6	2/6
A dressing cream.			
BORANIUM. A hair tonic		22/6	2 /6
CLEMINITE. For a face lotion		22/6	2/6
COLLIANDUM. For a face tint	***	22/6	2/6
PERGOL. A deodorant	• • •	22/6	2/6
TEKKO PASTE. Camphor cream	• • •	22/6	2/6
STALLAX. For a shampoo	• • •	22/6	2/6
JETTALINE. For clearing the skin	• • •	31/6	3/6
PHEMINOL. A depilatory MENNALINE. For the eyelashes	• • •	36/- 36/-	4/- 4/-
MENNALINE. For the eyelashes MERCOLIZED WAX. A face cream	• • •	31/6	3/6
STYMOL. For oily complexions and blackheads		36/-	4/-
SILMERINE. Hair-curling fluid		22/6	2/6
BARSYDE. Dandruff eradicator		22/6	2/6
TAMMALITE. For grey and faded hair		22/6	2/6
LIQUID PERGOL		31/6	3/6
To check excessive perspiration locally.		•	,
BICROLIUM. For whitening the hands		22/6	2 /6
HARAPOSA. Nut oil shampoo		22/6	2/6
COCONOIDS. For figure development		31/6	3/6
The Products of Messrs. PARKER, BEL	MO	NT & C	co.
CLINICI DEPONDO -		36/-	4/-
CLYNOL BERRIES. For obesity		58/6	6/6
SOFT PALERIUM. For wrinkles			5/-
LIQUID NAIL POLISH. Brilliant and lasting		10/-	1/-
STOCKED BY ALL WHOLESALE	HC	USES.	

COLONIAL DEPOTS AND AGENCIES.

ALL WHOLESALERS, & DEARBORN (Australia), Ltd., Grace House, Clarence St., SYDNEY.

LENNON Ltd., Cape Town, etc.

SOUTH AFRICA:
SIVE BROS. & KARNOVSKY, Johannesburg.

FRAMJEE & SON, Bombay.

SMITH, STANISTREET & CO., Calcutta.

 $\begin{array}{c} NEW~ZEALAND\\ {\rm SHARLAND}~\&~CO.,~Auckland~and~Wellington. \end{array}$

SOUTH AMERICA:
DEARBORN (South America), Ltd., Calla Salta 264, BUENOS AIRES.

- ► VALET AUTO-STROPS
- ► GILLETTE BLADES
 - ► H.A.C. Rustless Razors
- in leather case, with 6 Valet blades, guaranteed clean and perfect,
- Genuine U.S.A., fresh arrival, English wording 3/5 doz. for 10 dozen.
- made from best steel specially hardened, tempered & ground. Better than many 10/6 razors.

- ► GILLETTE BROWNIE Razors with 3 blades
- Army Surplus Gillette Razors
- 21/- doz. slightly imperfect 24/- doz. perfect
- ► Gillette Pattern Razors Vest-pocket size, in plated case

NAIL & CUTICLE SCISSORS, separate or assorted, 8/6 doz.

All orders of over £1 less $2\frac{1}{2}\%$ discount for cash.

CANNON.

27 CANNON ST., LONDON, E.C. 4.

PHONE: CITY 8974.



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Two Summer Troubles and how to counteract them

FECTO v. FLIES.

Flies are attracted by bad odours: Fecto destroys bad odours, and repels insects of all kinds. Fecto sprinkled on refuse prevents it from becoming a breeding ground for flies.

These facts should help you to sell more Fecto.

Everyone is more or less interested in the campaign against flies.

GERMICIDAL SOAP, P., D. & CO. v. GNATS, ETC.

The use of Germicidal Soap, P., D. & Co., has been found to give a considerable degree of protection from the attacks of insects. When a customer complains of the bites of mosquitoes, midges, etc., suggest washing the exposed parts with Germicidal Soap, P., D. & Co.

Such a recommendation will often effect a sale and lead to the adoption of this soap for other purposes.

Write for best terms and sales suggestions.



PARKE, DAVIS & CO. 50-54, Beak Street, LONDON, W.1

Laboratories - - Hounslow, Middlesex

"CUTEX"

FREE GOODS OFFER, JUNE 1922

Have you sent your order either to us or your Wholesale House?

Have you made your Window Display?

Are you taking full advantage of our advertising?

Are you seconding our educational advertising campaign by introducing "Cutex" to your customers?

Are you interested in 43°/o profit on your outlay?

These are questions which you alone can answer.



All we ask you to do is to Display "Cutex" in Your Window and on Your Counter, and when your customers ask for "Cutex" supply "Cutex," and not an inferior or imitation article. Your good name and our reputation are involved. Please protect both.

NORTHAM WARREN CORPORATION, NEW YORK

Sole Agents:

HENRY C. QUELCH & CO.

4/5 LUDGATE SQUARE · LONDON · E.C.

"CUTEX" Free Goods Offer

Note.—The "CUTEX" offer of free goods is LIVE STOCK

It is the No. 1 "CUTEX" Cuticle Remover—the standard "CUTEX" line and the one in greatest demand. The bonus is thus not only a liberal one, but genuine stock as good as money. From the list of "CUTEX" lines below, make up an assorted order to the amount of £5 (Five Pounds) and you will receive as bonus:

dozen No. 1 "Cutex" Cuticle Remover 100 samples "Cutex" Nail Polishing Powder Showcards

In order to introduce the three new numbers which are indicated in heavy type, you are required to buy of these the small minimum order indicated. Of any, or all of the other goods, you may order as you wish, making the assortment as large as you like and the quantities of individual items as large or small as you wish.

Fill in the Order Form, detach it and post to-day.

Name			 	
	./			
Address				

Dozen	No.	Article	P.A.T.A. Retail Price	Wholesale Price per Dozen	£	Cost	d.
1/2 1/4	1 2 4 5 6 8 9 10 11 13 16 17 18 19 22	"Cutex" Ideal Cuticle Remover, Small "Cutex" Ideal Cuticle Remover, Large "Cutex" Nail, White "Cutex" Nail Polish Cake, White "Cutex" Nail Polish Cake, Pink "Cutex" Nail Powder Polish on Card "Cutex" Nail Polishing Paste, Pink "Cutex" Nail Polishing Paste, White "Cutex" Nail Polishing Paste, White "Cutex" Cuticle Comfort "Cutex" Cuticle Comfort "Cutex" Travelling Manicure Set "Cutex" Boudoir Manicure Set "Cutex" Boudoir Manicure Set "Cutex" Five-Minute Sets "Cutex" Nail Polish Sticks, on Card		18/- 36/- 18/- 18/- 18/- 18/- 18/- 27/- 84/- 168/- 9/-			
				Total £			



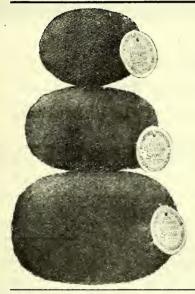
SWANDOWN **SWANDOWN** **SWANDOWN** **SWANDOWN** **SWANDOWN** **SWANDOWN** **SWANDOWN** **SWANDOWN** **SWANDOWN** **Over 600,000 boxes were sold during our 6 weeks bonus period. **What have you done?** **Have you displayed Swandown in your window, or have you put it under the counter?* If you took advantage of our bonus offer do you realise that every time you sell a 1/- box of "Swandown" you make 5d. net profit!! If you want more Samples or Showcards write for them and get your **WINDOW DISPLAY** in at once. **STATISTICAL CO.** HENRY C. QUELCH **CO.** 4 **D 5 LUDGATE SQUARE, LONDON, E.C.4* **STATISTICAL CO.** **HENRY C. QUELCH **CO.** **STATISTICAL CO.** **STATISTICAL CO.** **PHILADELPHIA** **Sole Agents** **HENRY C. QUELCH **CO.** **STATISTICAL CO.** **STATISTICAL CO.** **STATISTICAL CO.** **PHILADELPHIA** **Sole Agents** **HENRY C. QUELCH **CO.** **STATISTICAL CO.** **STATISTICAL C



'ABLUTONIC" RUBBER SPONGE

The "Fine Turkey" of the Rubber Sponge class. Possessing more agreeable and lasting qualities than any other Rubber Sponge.

SPECIAL BONUS DISCOUNT of 10% on ALL ORDERS of £3 AND OVER



The "Ablutonic" Rubber Sponge is a veritable triumph of perfected manufacture, and is without a doubt the finest article of its type on the market.

It is beautifully soft and durable, extremely absorbent, quite free from odour and improves with use.

OVAL SHAPES.

2 3 Sizes No. 0 1 Price 15/-8/-10/6 22/-30/- per dozen. 2/-Retail Price 1/-1/6 2/9 4/- per piece.

ROUND SHAPES.

Sizes No.	R.1	R. 2	R.3	R.4
Price	13/6	18/6	27/-	39/- per dozen.
Retail Price	1/9	2/3	3/6	5/- per piece.

We strongly recommend the following sample assortment should be ordered. It has been found a very popular one. ORDER AT ONCE.

PACKED IN 1 BOX WITH SPECIAL SHOW BILLS AND PRINTED MATTER.

	Usual Terms : $2\frac{1}{2}$ % cash monthly account.							C	COST	£2	16	8	
									I	Less 10	%	6	4
			SEI	LLING	G £5	0	6				3	3	0
1	,,	3	3. ,,	2/9		16	6	,,	22/-	,,		11	0
1	,,	2	2. ,,	2/-	1	4	0	,,	15/~	,,		15	0
2	,,	1	. ,,	1/6	1	16	0	,,	10/6	,,	1	1	0
2	Dozen	No. 0	. Reta	il 1/-	1	4	0	Costs	s 8/- p	er doz.		16	0
					£	5.	d.				む	s.	d.

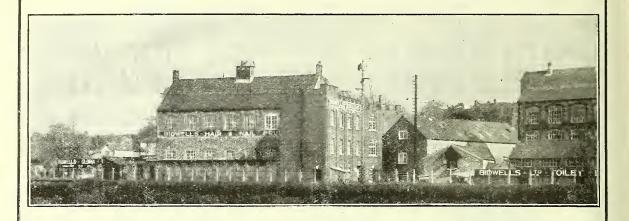
Each Box contains ONE "ABLUTONIC" Sponge, free of charge, for the personal use of the purchaser, who can then be convinced of the qualities claimed for the article.

BRANCH, INTERNATIONAL SPONGE IMPORTERS, LTD.

18/19 Red Lion Square, LONDON, W.C. 1

SPONGE & LOOFAH IMPORTERS.

CHAMOIS LEATHER DRESSERS.



SEVENTY-FIVE years ago **AXMINSTER** was noted for its Carpets; at the present time it is noted for BIDWELL'S "GLORIA" Tooth Brushes, Hair Brushes & Nail Brushes.

BIDWELLS, LTD., CASTLE MILLS, AXMINSTER

G. B. KENT & SONS, LTD.

Are known the World over as the Largest Manufacturers of

BRITISH RUSHES

Please write for full Particulars to—

75 Farringdon Road, E.C.1.



NITS

BINNS'S "Silver"
NIT Comb (Unrivalled)

Equally useful for removing NITS from the hair or as a Dust Comb for grown-ups.

Always look for this block on box containing Comb.

The Comb of the moment for School Medical Inspection work.

NO COMB GENUINE WITHOUT IT. Send for particulars to the Sole Maker.

GEO. A. BINNS, Archer St. Mills, HALIFAX. SUPPORT BRITISH INDUSTRY. (The only address.)

When you buy

SPONGES

BEST VALUE.

-SUBMIT SAMPLES.
-SEND CASES ON APPRO.

we can give you

Write to ALZA CO., ChorIton-cum-Hardy, MANCHESTER.

Branch Depot of COOPER & COOPER, Sponge Importers & Fishers, LONDON.

N.B.-ENGLISH FIRM, and no connection with the international.

A FABLE By ASHLEY STERNE.

he King who Put Two, and the Prince who Took One.

HERE once lived a widowed KING-he had lost the QUEEN in a TRAM-who had two DAUGHTERS, one PLAIN, the other COLOURED. The plain one (Ethel) was so DREADFULLY plain, poor thing, that you might have mistaken her for a VEGETABLE marrow; but the ured one (GERTIE) was so distractingly beautiful that all the LWAY companies used to run SPECIAL Excursion trains times a week for the folks to come and look at her.

Now the KING was very proud of GERTIE, and was most ous for her to contract a RICH and NOURISHING MARous for her to contract a RICH and NOURISHING MAR-GE, partly because it's customary for BEAUTY to marry into SUPER-TAX, and partly because he was deucedly hard up—t of the CROWN JEWELS being at Attenborough's, and the YAL PALACE mortgaged up to the last brick. But he had crible grouch on ETHEL, and didn't care a row of beans ther she married or entered a MONASTERY. He never d to get HER married, not even by paying a heavy underng commission!



A Widowed King.

Now it happened that a very WEALTHY (and hence desirable) PRINCE of an adjacent COUNTRY (first country on the left past the BUTCHER'S, to be precise) was looking for someone to do the housekeeping and count the washing, and learning that the KING owned a brace of unclicked daughters he decided to call one day and inspect the GOODS.

But you must know that though GERTIE was so BEAUTI-, she was nevertheless, very careless about her PERSONAL arrance. Frequently she had her JUMPER on back to front, kirt hitched up with a safety-pin, and a loose tape hanging out r placket-hole; while sometimes she had LADDERS in both stockings simultaneously. Therefore, when she heard that the PRINCE had called (object, matrimony) and was waiting to see her in the Throne Room, you will not be surprised that she made no attempt to UPHOLSTER herself more neatly.

"My BEAUTY will be sufficient excitement for him for one afternoon," she quothed. "It isn't as if I had any COMPETITION to fear from poor, plain Ethel." And a Hollow Laugh laughed she.

But ETHEL, when she heard of the Prince's arrival, at once put a new PERMANENT WAVE in her hair, ran a PINK ribbon through her CAMISOLE, got into a bobbed skirt which showed her SILK STOCKINGS right up to—well, up to the best advantage, and finally put on one of those MILK-AND-ROSES COMPLEXIONS which you buy by the bottle.



"THESE," said the King, as the two girls entered the room together, are my two DAUGHTERS—not, as you might imagine, one DAUGH-TER and one performing MELON. The beautiful one is GERTIE, the ug—, I mean, the other one, is ETHEL.

The PRINCE bowed low, but it was a long time before he resumed the PERPENDICU-The Prince bowed low.

The Prince bowed low.

The Prince bowed low.

The Prince bowed low.

NATTY shoes, her NICE silk stockings, and her DAINTY bobbed skirt. When at last he lifted his HEAD he took but the

BRIEFEST GLANCE at GERTIE, who was wearing the same JUMPER which she had dropped a poached egg on at breakfast that morning.

"I've chosen, KING," said the PRINCE, promptly "I'll have the ATTRACTIVE one!" and he advanced and took ETHEL by

As for GERTIE, she fell into a SWOON, and the KING fell into the COAL-BOX.

 \mathcal{M}_{oral} :

ATTRACTIVE PACKAGES SELL THE GOODS.

(Reproduced from "HELLO" by permission.)



DRD, SHAPLAND & LTD

GREAT TURNSTILE,

HGH HOLBORN, LONDON, W.C. 1.

Perhaps we can be of use to you?

For over 80 years we have specialised in the design

For over 80 years we have specialised in the design and printing of attractive Cartons, Envelopes, Labels, Handbills, Showcards, Window Bills, Stationery and all Advertising matter for Chemists and Druggists.

We have our own Works at Whetstone Park, with every modern facility for the production of high-class colour printing by the Offset, Lithographic and Letterpress process. Overleaf you will find further particulars and reproductions of our work.

X/E are specialists in Chemists' and Druggists' Printing and Stationery, and undertake the designing and registration of Trade Marks.

Below is an abbreviated list of the type of work in which we have unrivalled experience.

Account Books Account Slips

Agents for Registration of Trade Marks. Designs furnished if required

Ask for it.—If you don't see what you require in this list, ask for it all the same

Bags Bands

Blotting Pads Billheads Booklets Business Cards

Cartons Catalogues Certificate Books Circulars

Demy Paper Dentistry Booklets Envelopes of every description, Plain or Printed

Engraving on Copper and Brass

Folding Boxes Gelatined Show Cards Giant Cartons Gold Paper Labels

Grease-proof Paper Handbills

Invoice Books Jam Pot Covers

Jujube and Lozenge Envelopes

Labels of every description, from stock or printed to order

Lozenge Envelopes Memorandums

Continued on the opposite page.



Estimates given promptly for g 1 printing of any kind.

We pride ourselves on turning t conscientious work of a high staard at reasonable prices. May quote for your next printing jo?



supplement was printed by half-tone

line-colour process in our own works.

FC D, SHAPLAND & CO.

Gree Turnstile, High Holborn, LODON, W.C.1. WE have every modern facility for Letterpress, Lithographic and Three-colour Work, and an immense stock of Designs and Blocks suitable for Chemists' and Druggists' Advertising requirements.

An abbreviated list, continued :: from the opposite page. ::

Mineral Water Labels

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Paper Seals Parchment Paper

Photo-Print Cases Photographic Labels
Poison Books Post Cards

Post Card Books Prescription Books

Prescription Envelopes

Price Lists Price Tickets
Receipt Books Rubber Stamps

"Sol-Vo" Sanitary Paper, in Packets

"Sol-Vo" Sanitary Rolls

Show Cards Soap Wrappers

Syphon Receipt Books

Tallies Temperature Charts

Tooth Brush Envelopes
Trade Mark Registrations

Transparent Grease-proof Paper
Twine Veterinary Labels

Weight Cards Window Bills
Window Slips Window Tickets

Wine and Spirit Labels

Wrappers Wrapping Paper



Buy Sponges from the Direct Importers

ESTABLISHED OVER A CENTURY

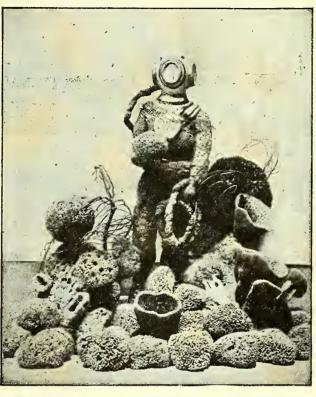
Orders by Post receive prompt and personal attention

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"DAQUEZ, ALD., LONDON"

Our Sponges can be had in Original Packages as received from our Buyers at all the Fisheries, or

> BEST EXPORT PRICES



An Enormous
Stock to select
from.

Telephone No.

Avenue

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can be packed in any way to suit customers' requirements, either Natural or Bleached.

Sponges specially selected for all markets and for all purposes

(Sponges of ALL descriptions always in stock, at LOWEST POSSIBLE PRICES consistent with a reliable article.)

I. & M. COHEN

(INTERNATIONAL SPONGE IMPORTERS, LTD.)

BRANCH

Sponge Merchants, Importers and Exporters,

CHAMOIS LEATHER DRESSERS, and PROPRIETORS of the ABLUTONIC BRAND of "RUBBER SPONGES."

Contractors to the Government, Railways and Steamship Companies, etc.

KINDLY NOTE.—Please address all orders, etc., to-



"THE WHITE HOUSE"



53 & 54 HOUNDSDITCH, & 66 St. MARY AXE, LONDON, E.C.

PLEASE MARK ALL INDENTS WITH OUR NAME

"CELSIT"
HANDLES
for
SHAVING
BRUSHES
are
UNBREAKABLE
NON-POROUS &
NON-CORROSIVE
WITH AN IVORY-LIKE
APPEARANCE

The cost is no more than bone. Insist on your wholesaler supplying shaving brushes with "CELSIT" handles.

THINK OF THE TROUBLE THEY SAVE

We have permission to mention that the makers of the celebrated "CULMAK" shaving brushes have adopted "CELSIT" handles.

THIS SPEAKS FOR ITSELF!

(A good name is more than riches.)



goes one better than ordinary ammonia in quality—and profit. Recommend it and reap that benefit.

We do not put the label on until the quality is there.

All experienced buyers know that the name of Sutton stands for trustworthiness, uniform high quality, and absolute purity.

Please send for terms:

G. F. SUTTON, SONS & Co. Osborne Works, Brandon Road, KING'S CROSS, LONDON, N. 7

GENUINE GENUINE GILLETTE BLADES U.S.A. All New, not American Army stock. Whilst stock lasts, 37/6 per box of 10 doz. CASH WITH ORDER. STANDEN & PERKS, 271 Great Lister Street, BIRMINGHAM.

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A PERSONAL LETTER.

Solution

As a special offer we will prepare a strong business pulling letter, and supply solution duced on your own note-heading for 21/=, or 1,000 copies 27/6, cash with order. We also print attractive note-headings at lowest prices. Write for specimens.

THE PERFECT LETTER CO., 36 Whitefriars Street, London, E.C. 4.

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SPONGES

Turkey or Honeycomb.

WE CAN OFFER IMMEDIATELY

£20 - £20,000

PARCELS

We hold immense stocks in our London Warehouse which are open to the inspection of genuine buyers.

WE DEFY COMPETITION

and therefore welcome comparison with others.

Buying in Large Quantities, and being unfettered by any combine, we can offer at exceptionally advantageous prices.

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Only ENGLISH Address—32 MINORIES, LONDON, E. 1.

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 $33\frac{1}{3}\%$ Discount

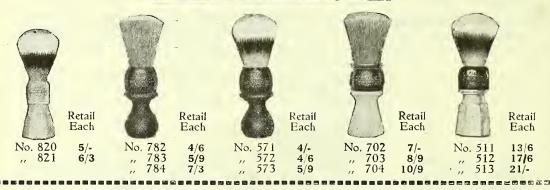
Good showcards and display supplied.



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Order a range to day.

100 Models from 2/3 to 63/- Retail.



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FRESH ARRIVALS OF HONEYCOMB & BROWN TURKEY

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IN ORIGINAL CASES.

Buy from <u>actual importers</u>, and thus save <u>intermediate profits</u>

WE CAN DEFY COMPETITION

Write for prices and type samples to:-

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32 Queen Victoria Street, London, E.C. 4.

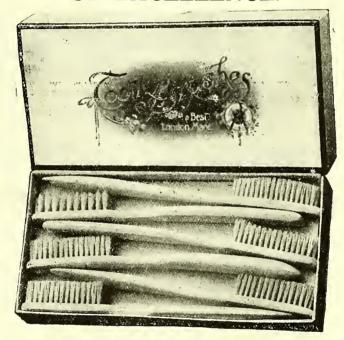
Telephone: City 5824.

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(MADE IN ENGLAND).

Wm. ADDIS

Made Tooth Brushes First in 1780, since then ADDIS TOOTH BRUSHES have always been the WORLD'S STANDARD OF EXCELLENCE.



CHEMISTS CANNOT AFFORD TO LOSE THEIR REPUTATION FOR RELIABILITY BY SELLING UNRELIABLE SUNDRIES.

ROBT. ADDIS & SON

TOOTH BRUSH SPECIALISTS

HERTFORD

OLDEST and ORIGINAL FIRM of TOOTH BRUSH MANUFACTURERS.

ESTABLISHED A.D. 1772.

HENRY'S CALCINED MAGNESIA.



For HEARTBURN, HEADACHE, GOUT, BILIOUSNESS, ACIDITY OF THE STOMACH, TRY

Henry's Calcined Magnesia

Free from Taste, Smell or Roughness to the Palate.

ADULTS.

A Safe Aperient for the most delicate constitutions.

May be given to children in early infancy. The addition of a small quantity of the Magnesia prevents milk turning sour on the stomach.

MESSRS. THOMAS and WILLIAM HENRY, of Manchester, England, beg to inform the Trade generally that they continue to manufacture their old-established "CALCINED MAGNESIA" in the Greatest Chemical Purity, and also wish to warn Buyers against the numerous spurious and very inferior imitations offered in various foreign countries.

For the guidance of the Trade they submit facsimiles of their Bottle, wrapped and unwrapped.

HENRY'S CALCINED MAGNESIA,

Price 2s. 94. Stemp dashed.

The Purchasers of this Hills are requested to observe that the words "THOS. AND WILLH. HENRY than the words of the carb boilty. This is the only effectual security against the counterfailed in litation, which are sold in bottles similarly monited, under their parameters."

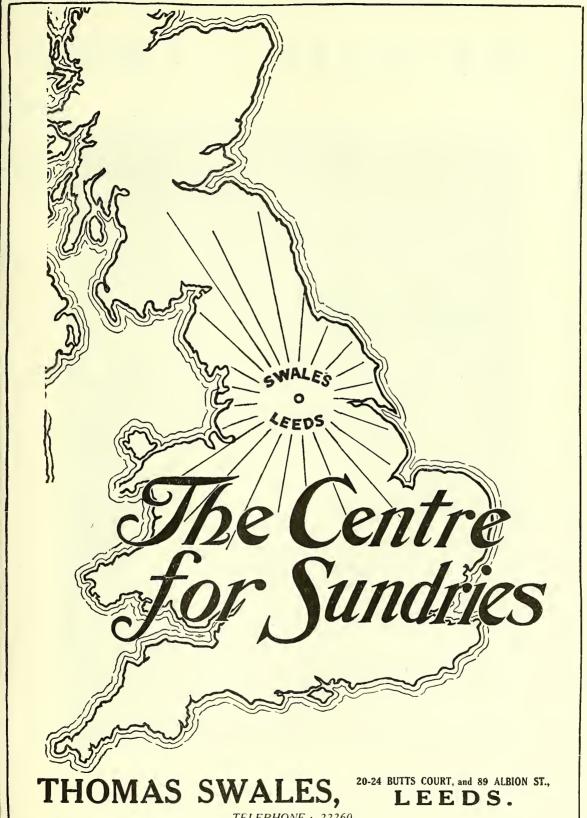
THE LABELS CAN BE HAD IN ENGLISH, SPANISH, PORTUGUESE, OR ITALIAN.

Messrs. HENRY will be pleased to hear from Merchants who are suspicious of any stock in their possession.

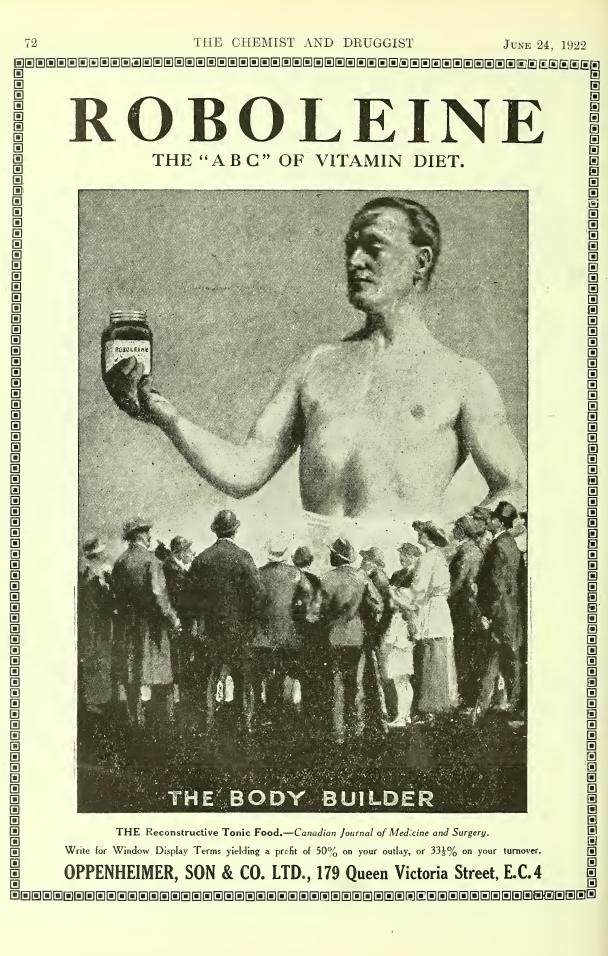
THE MAGNESIA MAY BE HAD THROUGH ALL WHOLESALE HOUSES.

Registered Trade Mark:-"HENRY'S CALCINED MAGNESIA."

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Write for a copy to-day

OUR new Price List of Organotherapeutic preparations is now ready for distribution.

THIS new issue contains information that is extremely valuable to medical men.

WE have made a complete rearrangement of prices and discounts.

ALL price and discount changes become effective at once.

POST CARD will bring you a copy by return.



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Tooth Powders and Paste

Face Powders and Toilet Powders of every description

Lime Cream

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(all grades)

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Cocoa-Nut Oil Shampoo (Liquid, Powder and Pomade)

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AGRICULTURE & HORTICULTURE

'IALINE' INSECTICIDE POWDER and 'IALINE' SUMMER WASH

are two most profitable and quick-selling lines.

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'Ialine' Disinfectants

FLUIDS

containing 10 — 80 % Tar Acids. High Co-efficient

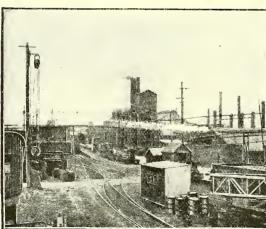
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up to 18-20 Rideal-Walker Method.

LYSOL

SHEEP

Approved by the Board of Agriculture for Sheep Scab.



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Benzols, Toluol, Solvent Naphthas, Carbolic and Cresylic Acids, Creosote and Fuel Oits, Pitch, etc. etc. Timber for Dock and Harbour work. Deals, Battens, Boards, Floorings, etc. Railway Sleepers, and Crossing Timbers, Telegraph Poles, etc. etc. Saw Millers and Timber Freservers.

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PROVED BY THE INCREASED DEMAND, NECESSITATING THE EQUIPMENT of a NEW FACTORY.

Mixed with any percentage of Cod Liver Oil.

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NEW MALT EXTRACT FACTORY FOR OLD-ESTABLISHED PRODUCTS.

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when applied to the hands, quickly evaporates, leaving a soluble skin on the hands. It is practically invisible, and can scarcely be felt, yet it is there, protecting the hands against the penetration of dirt into the skin. The dirtiest job imaginable can be undertaken with impunity, safe in the knowledge that when the hands are washed in cold water, with plenty of soap to dissolve the "Peldo," all traces of dirt are removed instantly, leaving the hands perfectly soft and white.

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4-oz. BOTTLE **7/9** doz.; 10-oz. **14/6** doz.

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AN

Historic Announcement

Society of Apothecaries of London,
Water Lane,
Queen Victoria Street,
London, E.C. 4.
May, 1922.

I am instructed by the Court to inform you that from the 16th May the Wholesale Business which the Society has hitherto carried on at Apothecaries' Hall will be closed.

The Society have handed over to Messrs. Randall & Wilson, Ltd., of 146 High Street, Southampton, their Process Book in order that the customers of the Society will be able to obtain the preparations which have been hitherto prepared by the Society, except as to certain special preparations otherwise disposed of.

While the Society regret that they will not be able in future to produce their various preparations, they feel that, in view of the standing of Messrs. Randall & Wilson, Ltd., their customers may have every confidence that their requirements will be satisfactorily fulfilled.

By order of the Court,

Bingham Walton.

Randall & Wilson, Ltd.

WHOLESALE DRUGGISTS,

146 HIGH ST., SOUTHAMPTON.

Established 1792.

Messrs. Randall & Wilson, Ltd., have pleasure in intimating that owing to the Society of Apothecaries having decided to cease their trading activities, they have taken over the Wholesale Connection of the Society, together with its Process Book (except as to certain Special Preparations), and they will be in a position to supply all the requirements of those who have hitherto depended upon the Society for Wholesale supplies.

Messrs. Randall & Wilson, Ltd., have for 130 years devoted special attention to the supply of pure drugs and to the production of the highest class of pharmaceutical preparations, and those who have hitherto dealt with the Society of Apothecaries may be assured that the traditions of the Society will be upheld, and that Messrs. Randall & Wilson, Ltd., will take every possible step to ensure that the confidence hitherto reposed in the Society may safely be extended to themselves.

Druggists'



Sundries.

Reg. Trade Mark No. 422329.

We can offer you a great variety of

HORN, CELLULOID, GALALITH, VULCANITE.

THERMOMETERS, TEATS, SOOTHERS, PUFFS, OINTMENT JARS, LOOFAH GOODS.

Sole Agents for AMERICAN MANICURE SETS, 3/- to 60/- each. SALOMON'S FRENCH LEMON JUICE SOAP. VAL DE FLORE FRENCH PERFUMES.

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Your enquiries solicited. Samples and Prices gladly given.

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Straw Hat Cleaner

Retails at 2d.

Lily Hand Tablets for Chapped Hands

Retails at 1½d. and 3d. per tablet.

Lightning Dental Jelly

Retails at 2d. and 4d.

THE HOUSE FOR

SOOTHERS, FEEDING BOTTLES,
RUBBER GOODS of every description.

Write for Quotations.

EDWARD WOOLF

Manufacturer of DRUGGISTS' SUNDRIES

St. George's Crescent, BIRMINGHAM.

SPECIAL NOTICE

Re

KOH-I-NOOR NAIL BRUSHES

The Makers regret that full supplies are not at present available.

WHOLESALERS, however, will be in possession of stocks by the middle of July.

RETAILERS are requested to place their orders at once to ensure delivery before the Advertising Campaign in the General Press commences.

© KOH-I-NOOR ©

(Registered No. 595009.)



THIS Brush will be Advertised in the Press in conjunction with the "KOH-I-NOOR" Tooth Brush, and is covered by the same Guarantee.

The novel shape will appeal to the Public, and has been tested and proved to be the most satisfactory shape for a Nail Brush.

16/- per dozen.

Retailed 2/- each.

© KOH-I-NOOP The Ideal Tooth Brush



 $50^{\circ}/_{\circ}$ profit on cost.

ATTRACTIVE DISPLAY STAND FREE WITH THREE DOZEN.

3/- Line. No. 523	2 / 6 Line. No. 522	Childs (1/6) Line. No. 519		
NOS. IN THE SERIES.	NOS. IN THE SERIES.	NOS. IN THE SERIES.		
201 202	101 102	50		
203 205	103 105	51		
207 208	107 108			



It pays you to display

Eucryl

and

Eucryl

pays you for the display

"We shall be ordering another £50 lot."

Thus wrote the Pharmacist after a fortnight of the display shown above.

OTHER PHARMACISTS WRITE:

BRADFORD

"The sales of EUCRYL goods have gone up by leaps and bounds since our Window Display was put in. In fact, this last few days we seem to have sold little else in Tooth cleaning material except EUCRYL."

ILFORD

"The increased demand more than trebled our usual sales,"

LONDON, W.C.

"Re Window Display. It proved a good thing, and paid for the space occupied. That is saying a good deal, seeing that we gave it the whole window."

LONG EATON

"Although we have given EUCRYL several shows, our sales have considerably increased since our SPECIAL show has been in."

MIDDLESBROUGH

"The show has stimulated sales enormously. In fact, EUCRYL sales have exceeded the requests for all the other Tooth preparations put together."

BISHOPS STORTFORD

"I have practically cleared the goods received early in the month. . . . The show has given just the fillip and stimulus needed, and I shall repeat at intervals an ENTIRE WINDOW SHOW."

YORK

"We never did better with a display, and sold more EUCRYL TOOTH PASTE in two weeks than we had done in two years."

LLANDRINDOD WELLS (Population only 3,000)

"The end of the show showed a net sale during the period of 22 dozen."

You also can make big sales with the big profit line

Why not give it a Full Window?

EUCRYL

The ALL-BRITISH DENTIFRICE

EUCRYL LTD., SHIRLEY, SOUTHAMPTON



FOR YOUR NEXT WINDOW DISPLAY write for our attractive new SHOW CARD in brilliant colouring.

Two Sizes: $14\frac{3}{4}$ ins. $\times 9\frac{3}{4}$ ins. and $7\frac{1}{2}$ ins. $\times 9\frac{3}{4}$ ins. Each to hang or stand.

EUCRYL LTD. :: SHIRLEY :: SOUTHAMPTON

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The following are some of our Registered Trade Marks:





ARSAMIN FORMOSYL MAGISAL MARRUBIN METHYSAL OMNEVIT SEDEFF SOLUBES STEARETTES STERILOID STERULES TRILACTINE

TYLCALSIN TYLLITHIN TYLMARIN TYLNATRIN VESALVINE VESCETTES

And, in addition, THE MARTIN



as applied to all our preparations.

The above preparations have been continuously brought to the notice of the Medical profession by dint of our efforts and advertising during the last forty years, according to the date at which each individual Trade Mark has been registered.

We think perhaps our friends do not always realise the importance of safeguarding these Trade Marks. We need hardly add that in addition to creating the demand for these preparations, we support the retailers' interests to the utmost of our power by protecting our goods at face value and giving liberal discount for trading purposes.

New Price List in forwarded as soon as



the press will be ready on receipt of card.

10 New Cavendish Street, LONDON, W.1.

Telegraphic Address: "Martindale, Chemist, London."

Telephone No.: Langham 2440.

Silent Salesmen that Sell the Goods

Sent POST FREE upon Request.

EACH post brings us letters of appreciation from Pharmacists who are doing record business in Sanatogen, Formamint and Genasprin, as the result of exhibiting our newest and most attractive Showcards.

At the request of our friends in the trade we have secured fresh supplies of these "Silent Salesmen," and will gladly send you a good selection of them. Applications will be dealt with in strict rotation—so send us a postcard now.

Are your stocks of Sanatogen, Formamint, and Genasprin sufficient to meet the increased demand? If not, replenish now, don't risk disappointing your customers through being "out of stock."

Please address all enquiries to-

GENATOSAN, LIMITED (Advt. Dept.).

Makers of

Sanatogen, Formamint Genasprin.

Loughborough, Leicestershire.





The highest quality sweet Essence, for professional use in Infant and Invalid Feeding.

Benger's Rennet is the ideal agent for the precipitation of curd and the production of whey, which can then be safely used for diluting the milk for young infants.

Whey thus prepared with Benger's Essence of Rennet is of the greatest value in the treatment of diarrhoea, vomiting, etc., and can be used with perfect safety and good results.

"JUNKET" SEASON. Whilst it is specially made for use in Infant and Invalid feeding, it makes excellent Junket cheaply, as so little of it is required. Pharmacists can recommend this line with the utmost confidence.

Put up in bottles of several sizes.

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Put up in handy glass tubes in boxes of 6 and 12 tubes to retail at 1/- and 1/8.

BENGER'S Peptonising Powders

These powders are double strength and rapidly digest milk, gruel and other foods of a farinaceous character. Colourless, odourless, and instantly soluble, they have a high reputation amongst members of the Medical Profession; and their portability is a notable feature which strongly recommends them to Nurses and other users.

Write us for particulars.



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BOX

THESE ARE TO DISPLAY

WALK-EASY TABLETS make a quick foot-bath; very much appreciated after walking, etc.

39/- gross.

Under 3/6 dozen.

SILKUM is one of the best sellers we pack-a plaster on silk with adhesive fixers. 48/- gross. Under 4/3 dozen.

> THE " ELFRIDA " (Regd.) SERIES has made a big appeal. It is a de luxe toilet series at reasonable prices. Each item is on the P.A.T.A. and shows you an excellent profit, and, very important, they bring repeat orders. A sample of any sent free on request.

We also pack in this series a Face Cream, Toilet Paraffin, Hair Tonic and Bay Rum.

Compound Syrup of Hypophosphites can be supplied either clear or cloudy. The pack and get up is in the best pharmaceutical style, and the preparation can be relied upon to be strictly to formula. As illustrated, 6-oz. size,

144/ gross. Under 12/6 doz. Also packed in 4-oz. and 12-oz. sizes.



105/gross.

9/dozen

ELFRIDA (Regd.) BAY RUM AND CANTHARIDES.

A wonderful seller and splendid get up.

99/gross.

8/6 dozen



P.A.T.A.

ELFRIDA (Regd.) COCOANUT OIL SHAMPOO.

A perfect preparation, does not become cloudy, and price competitive with the cheapest.

90/gross.

7/9 dozen under.





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Moorland COMPOUND SYRUP HYPOPHOSPHITES

B.P.C



THE GOODS JUST NOW!

Lemon Squash Powder is attractively packed in envelopes. One packet makes a pint sweetened ready for drinking.

22/- gross.

Under 2/- dozen.

The lines we illustrate are all selling in big quantities. Each is as perfect as we believe it can be made. Our endeavour is always to secure for you repeat orders and satisfied customers, and for these quality and price are essential considerations.

These preparations combine high quality with moderate price. All of them show you an excellent profit, and artistic show matter—a liberal supply—is included with all orders.



Lemonade Crystals are enjoying a big boom just now. Made with Terpeneless Oil of Lemon, Tartaric Acid and Sugar in just the right proportions for producing a perfect still lemonade.

87/- gross. Under 7/6 dozen.



SELLS AT CARRIAGE PAID TERMS

Moorland Health Salts are now too well known to need much describing. The special air-tight tin, fine, pin-head granule, unique effervescing properties, etc., make it well worth its price. Write for our special June bonus terms.

78/- gross.

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Moorland Morning Salt fulfils the most exacting requirements in quality, appearance and get up. A fine, uniform, pin-head granule, which pours readily from the bottle, the latter white flint, corked with a special flanged cork and screw aluminium measuring cap.

Under 12/6 dozen.



SELLS AT PER BOTTLE.

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JAMES WOOLLEY, SONS & CO., LTD. MANCHESTER

beg to inform their friends that they have opened

A COMMODIOUS SHOWROOM

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MANCHESTER, for the display of

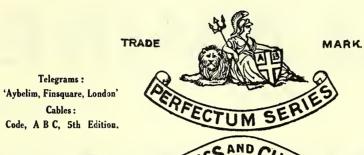
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Bandages, Lints, Gauzes, Cotton Wools, Dressings | Gauze Tissue Pads, Swabs, Plasters, etc.

Chemists' Vacuum Flasks, Belts, Mirrors, Bath Sundries Gloves, Bathing Caps, Powder Puffs, Sponge Bags, Holdalls, etc.

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Combs and Brushes of every description. Requisites Tooth and Face Powders, Tooth Paste, Manicure Sets, Scissors, Forceps, etc.

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Thermometers, Bed-pans, Urinals, Feeding Cups, Glass Measures, Enemas, Syringes,

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Hot Water Bottles, Sheetings, Beds, Air Cushions, Ice Bags, Sponges, Teats, Articles | Valves, Soothers, etc.

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15 & 17 Worship St., LONDON, E.C.2. 84 Miller St., GLASGOW.

And MANCHESTER.

FELAMINE

In bottles of 50 tablets.

IPECOPAN

Tablets. Solution. Malt-syrup.

FEMERGIN

In Ampoules (boxes of 3, 6, 12)

Solution (bottles of 15 ccm.)

Tablets (bottles of 15)

The above are now being prescribed by the Medical profession, and supplies can be obtained from your wholesaler.



SANDOZ CHEMICAL CO.,

(Pharmaceutical Department), BRADFORD.

"Put Money in thy Purse."—Iago.-

GOOD ADVICE.

THE 66 SELLS EASILY, GIVES SATISFACTION. BRINGS CONSTANT

REPEATS. YIELDS HANDSOME PROFIT.

(Patented)

SHOWS HOW

COST

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- AVERAGE

TAKE ADVANTAGE.—A sample may be had for the asking, or one sample parcel (not repeatable), accompanied by remittance, as follows:-

1 dozen No. 2, 4d. line ... 1 ,, ,, 2c, 6d. ,, ... 1 ,, ,, 3, 7½d. ,, ... 2/9 per dozen 3/2 4/8

Carriage paid anywhere within the United Kingdom for 10/6, or to any part of the World for 11/6.

May be obtained in the ordinary way from the Wholesalers, or direct from

F. SCHUTZE & Co. Ltd.

Manufacturers of Specialities in Druggists' Sundries,

Black Bull Works, London, N.7.

Extra Value Enhanced

Returns Sells at Sight And

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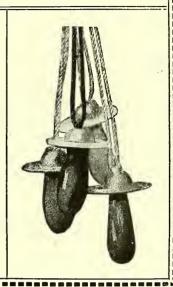
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EAU DE COLOGNE WINNER OF 5 GOLD MEDALS

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ORIGINAL FORMULA

Distilled in England for over 20 years and still unsurpassed.

In 1 oz., 2 oz., 4 oz. plain and wickered bottles, and wickered $\frac{1}{2}$, 1 and 2 pint, Champagne shape; reputed sizes.

SPECIAL NEW STYLE. "Anchor Cork," 1, 2, 4, 8 oz., wickered, with extra Cork attached. Very convenient for travelling.

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Dr. Cassell's Tablets

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SHOULD BE DISPLAYED NOW!

This is the psychological moment.

We have had a very trying winter. Its effect on the health of the general public is very noticeable. It is an even chance that one out of every two people who look in your windows needs a tonic medicine or a remedy for skin trouble.

Send a Window Display Order (£10 worth of Veno goods), show them NOW, and so secure extra trade as well as the EXTRA 5%

Prices Small Size (1/3 retail) 12/5 per doz. | Cash Discount | Large Size (3/- retail) 30/- ,, ,, | 2\frac{1}{2}\frac{0}{1/0} in 30 days.

Window Shows.—For displaying showcards we allow an additional 5% and the display undoubtedly assists sales. (With £100 parcels the cash discount is 5% in addition to the 5% for display.)

NOTE—ALL GOODS DELIVERED CARRIAGE PAID, IN FREE BOXES.

Sole Manufacturers & Proprietors—

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Manufacturing Chemists,
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Telegrams: "SEAWEED MANCHESTER."

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Spirits of Wine

all strengths

Absolute Alcohol

Try the "Extra Rectified" for your Perfumery.

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Chemists' Wines

Sherry, Port, Meat and Malt, Orange, Orange and Quinine

White Cross Whiskies

Scotch and Irish.

Write for Samples and Quotations.

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D1 Cale Distillery, Hutton Road, LAMBETH, S.E.11.

Telegrams: "BURROCALE, PHONE, LONDON."

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Established at Chelsea 1820.

Are You Getting Your Share of Calox Profits?

MANY enterprising chemists have increased their sales of Calox—The Oxygen Tooth Powder—from 100 to 400%, by prominently displaying Calox on their counters or in their windows.

The Calox carton makes a most attractive little bit of display—a real business getter—bringing quick and ready sales and a very handsome margin of profit.

It merely requires that a customer try Calox *once*, in order to turn him into a steady user of this most scientific and best of all dentifrices. For Calox is absolutely dependable for cleaning, whitening and beautifying the teeth.

Be sure to include Calox with your next order.

Headquarters for Drugs, Botanicals and Essential Oils

McKesson & Robbins, Inc., are headquarters for drugs of every kind.

Especially American Botanicals, Crude Drug Products and Essential Oils.

We solicit correspondence with quantity buyers, assuring them of the highest quality and the most advantageous prices.

We also manufacture a full line of pharmaceuticals. Also a number of specialties suitable for colonial and foreign trade.

We should be glad to send particulars relating to all these.

Do not delay in taking advantage of the excellent profit-making opportunities here presented. Write today.

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91 Fulton Street

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PREDOMINATES

WITH the help of our advertising you have to sell these products the first time only. The second and each successive sale is assured by the quality of the goods themselves. Never be out of stock of these quick-selling, rapidly moving lines. Recommend them with confidence and remember—every sale means a pleased and satisfied customer.

REUDEL BATH SA

THE BATH PREPARATION PAR EXCELLENCE, cures Corns and all Foot Troubles permanently, stops Rheumatic or other aches and pains within ten minutes.

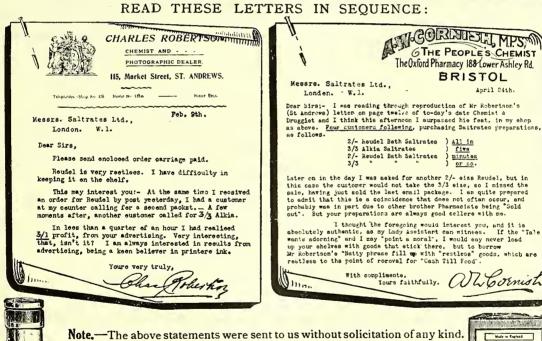
The acme of perfection in Salines. Unrivalled for Liver, Kidney, Stomach, Blood and Intestinal Disorders.

Sells at 2/- and 3/3 (P.A.T.A.)

Sells at 3/3 a large bottle (P.A.T.A.)

These products simply will not stay on the shelf.

SOME TRULY REMARKABLE TESTIMONY FROM CHEMISTS



70U can stock these goods on Guaranteed Sale Terms. Carriage Paid in United Kingdom on orders for 3 dozen and over, which may be assorted. Special Terms for Window and Counter Display.

SALTRATES LIMITED Euston Buildings, LONDON, N.W. 1.





Is Your

FINAL OPPORTUNITY!

BONUS we are offering on your initial order for IRON- that you secure your supply IZED YEAST—that remark- of IRONIZED YEAST now able new remedy for weak and because the advertising is in anæmic men and women, the the Daily Mail, Chronicle, success of which is being so Express, Mirror and Evening fully demonstrated and dis- News, and that you take cussed. IRONIZED YEAST

avail yourself of the is the talk of the trade.

It is sound business advice advantage of the

INDUCEMENT SPECIAL STOCKING WE OFFER YOU Make these Big Profits YOURS!

EXTRA PROFIT 10/- A BONUS OF 2 PACKAGES FREE WITH EACH 3 DOZ. ORDER EXTRA PROFIT 25/- A BONUS OF 5 PACKAGES FREE WITHEACH 6 DOZ. ORDER EXTRA PROFIT 60/- A BONUS OF 12 PACKAGES FREE WITH EACH 12 DOZ. ORDER

This offer expires July 8th, 1922. Prices to you on IRONIZED YEAST are as follows:

Prices per 1 dozen 60/- less 25% With every 3 dozen 2 PACKAGES FREE and 25% and 5 % With every 6 dozen 5 PACKAGES FREE and 25% and 7½%

With every 12 dozen 12 PACKAGES FREE and 25% and 10 % The free goods will be sent to you direct by us. Your order will be handled by your

wholesaler.
Please note 25% on 1 gross means
Please note 10% extra on 1 gross means Your selling price is 2 14 0 Profit Your cost is -3 0 0 Pic tit Please note 12 extra 5/- packages means £14 14 0

Difference for Profit £14 14 0 Profit

or on your investment 60%, nearly 61%, and this on a highly advertised line.

Order to-day without fail—be prepared to meet the large demand. You may be certain you will have more sales and greater profits on IRONIZED YEAST than you have ever made before on a · single pharmaceutical preparation.

Awaiting your valued order, we are,

Faithfully yours, The British Harold F. Ritchie & Co., Ltd., 33, Farringdon Road, London, E.C.1.



ESTABLISHED 1880.

ON THE LIST OF GOVERNMENT CONTRACTORS.

MEDALS and AWARDS.

LONDON, 1881. VIENNA, 1883. CALCUTTA, 1884. CHICAGO, 1893.





TRADE MARKS.

Telephone—HOP 1831.

Codes used—ABC, 5th Edition.

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"EKLIPS LONDON."

CONCENTRATED EXTRACTS

"4 MEDALS" BRAND.

For the immediate production or

Tinctures, Infusions, Fluid Extracts, &c.

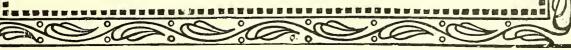
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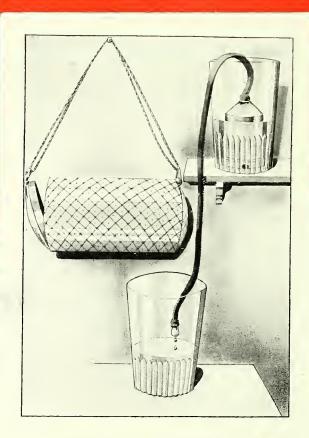




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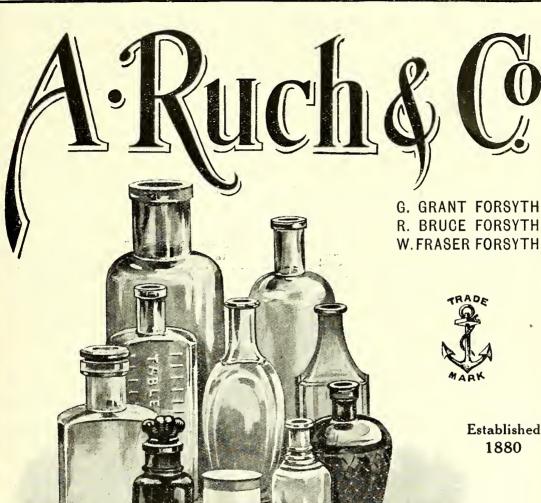


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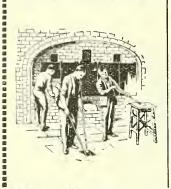
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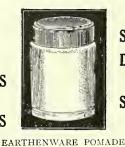
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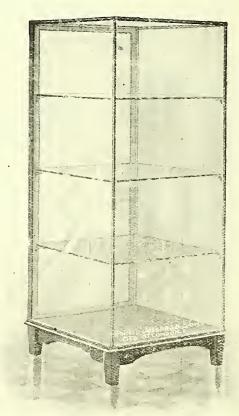
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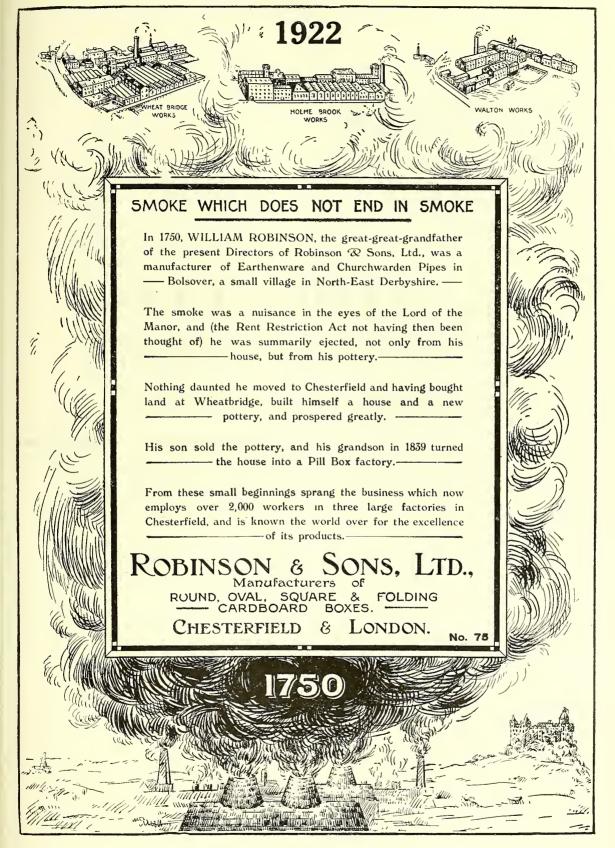
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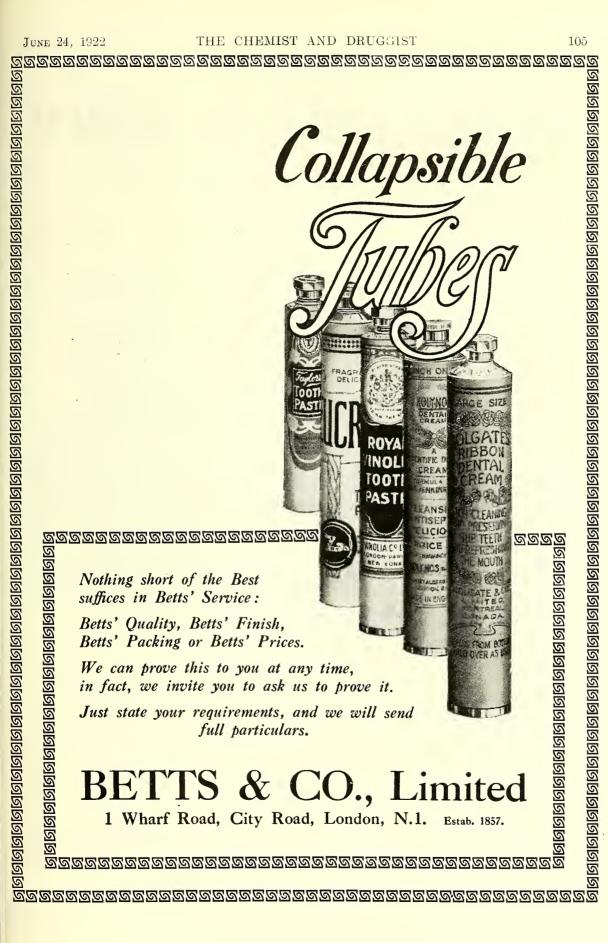
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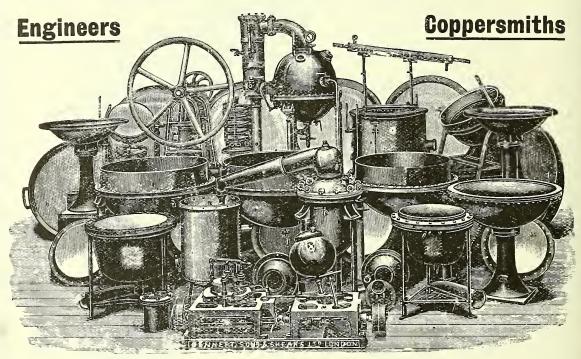
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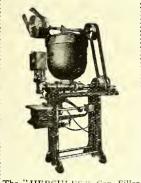
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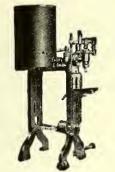
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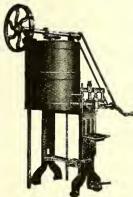
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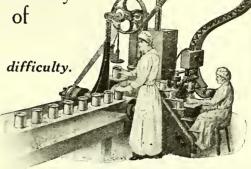
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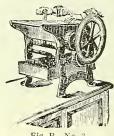


Fig. B. No. 2. ROTARY CUTTING MACHINE



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STANDARD PATTERN combined Machines (Figs. 1 to 4) will at one operation thoroughly Sift and Mix all dry powders, and reduce to powder and sift any that contain lumps. Largely used for Drugs, Chemicals, Acids, Baking Powder, Self-raising Flour, Cattle Foods, Sugar, Colours, Sherbet, Coffee, Flour blending, Disinfectants, and all kinds of Medicated Powders.

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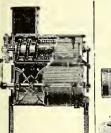


Fig. 1. Sizes for Hand Use.



FIG. 2. Power Sizes with Pulleys.



Pulley and Gear Drive. The type recommended



FIG. 4. Large capacity Power-driven Machines.



FIG. 5. For Counter use a small quantities.



CARDNER'S Patent "RAPID" SIFTER, MIXER, AND CRUSHER.

Fig. 6.

For breaking down large and hard lumps in Sugar, Acids, Chicory, Salt, Colours, Soda, small enough to be reduced, sitted, and mixed afterwards.



GARDNER'S Patent "RAPID" SIFTER, MIXER, AND ESSENCE SPRAYER.

Fig. 7.
For adding Liquids, Essences, Flavourings, Liquid Colours, Oils, &c., to Sugar, Acids, Flour, Face Powders, Disinfectants, Seasonings, and many kinds of Powders and Crystels during Mixing Mi Crystals during Mixing.



Fig. 8

Open Bottom Pattern.

CARDNER'S Patent "RAPID" SIFTERS (Figs. 8 to 12) (Power Sizes) sift any kind of Dry Powders, and reduce to powder any that may be lumpy, such as Tartaric Acid, Bicarbonate of Soda. Magnesia, Arrowroot, Sugar, Flour, Colours, Sheep Dip, &c.



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Fig. 9.





Fig. 11.



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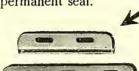
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ANOTHER NEW GREENWICH LINE

SWEETENED GREENWICH LEMONADE

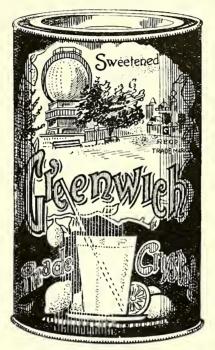
In 4½ oz. (approx.)
4 coloured
Decorated
Tins

7/- doz.

Retails at

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Greenwich Lemonade Sweetened is suitable for the highest class Chemist's business and is already selling freely in many Pharmacies.



A smart pack

Makes 20 Tumblers

80/- gross

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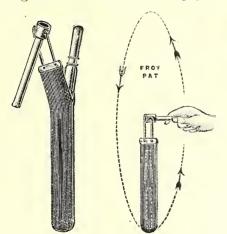
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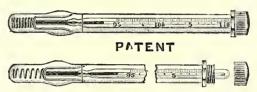
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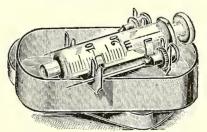
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thing a woman needs to carry about with her on these hot dusty days, neat, compact and charming.

These puffs sell to the public at 1/3 each, while the price to the chemist is 22/6 per two dozen. With every order for two dozen, however, an extra puff is given. Also, a beautiful gilt basket-work display stand, as illustrated, which will show off the puffs to best advantage on the counter, is presented with every initial order.

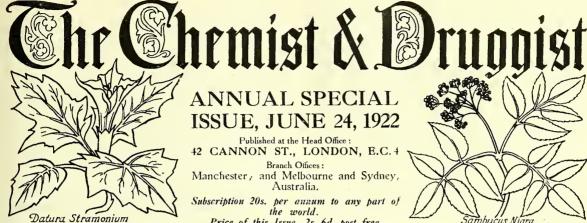
You must have one of these with the twenty-five little bags. Send your order at once Shown with it, the puffs will be one of the best selling lines in your pharmacy.

THOS, CHRISTY & CO., 4/12 Old Swan Lane, London, E.C. 4.









ANNUAL SPECIAL **ISSUE, JUNE 24, 1922**

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Coming Events

Tuesday, June 27

South-West London Chemists' Association, Westminster School of Pharmacy, at 8.30 p.m. Annual meeting.

Wednesday, June 28

Devon Pharmaceutical Association, Guildhall, Exeter, at 3.30 p.m. Annual meeting. Tea, by invitation of the Mayor (Mr. P. F. Rowsell), at 4.45 p.m. Manchester Chemists' Golfing Society. Match v. Liverpool at Formly.

Retail Pharmacists' Union (Devon Branch), Guildhall, Exeter, at 4.15 p.m. Meeting.

4.15 p.m. Meeting.

Royal Society of Arts, John Street, Adelphi, London, W.C., at 8 p.m. Annual meeting.

Friday, June 30

Edinburgh Chemists, Assistants, and Apprentices Association.

Botanical excursion to Cramond, conducted by Mr. Henry Stout, Ph.C. Train leaves Princes Street Station at 7.23 p.m.

Manchester Pharmaceutical Association.—A picnic will be held on July 5. Members will proceed by train (special saloons) to Grindleford, leaving Central Station at 2 p.m. Tickets (inclusive),

12s. 6d. cach.

The Birmingham Pharmaceutical Association will hold the annual excursion on July 5. Motor-coaches to Stratford-on-Avon, starting 2 p.m. High tea at Shakespeare Gallery Café, beating, sports, etc. Tickets (10s. each) from secretary, Mr. F. Smith, 221 Soho Road.

English and Welsh News

The Editor would be obliged if subscribers would send him marked copies of newspapers containing items of interest for insertion in this other news sections of the "C. & D."

Dangerous Drugs Act

[From the "London Gazette," June 16.]

WITHDRAWAL OF AUTHORISATION (WALTER THOMAS FUGE) Withdrawal of Authorisation (Walter Thomas Fuge)
Whereas Walter Thomas Fuge, of 3 White Hart Street,
High Wycombe, being a person who is bona fide engaged
in practising dentistry, and was so engaged on July 28,
1916, but is not registered under the Dentists Act, 1878,
has been convicted of an offence against the Dangerous
Drugs Act, 1920:
Now therefore I havely withdraw from the solid Walter

Now, therefore, I hereby withdraw from the said Walter

Drugs Act, 1920:

Now, therefore, I hereby withdraw from the said Walter Thomas Fuge the authorisation granted in pursuance of the Dangerous Drugs Act, 1920, by the authority under my hand dated August 13, 1921, to certain persons not registered under the Dentists Act, 1878, to purchase preparations containing not more than 1 per cent. of cocaine for use as local anæsthetics in dentistry.

Whereas Walter Thomas Fuge, of 3 White Hart Street, High Wycombe, being a person duly registered under the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1808, has been convicted of an offence against the Dangerous Drugs Act, 1920:

And whereas the said Walter Thomas Fuge cannot, in my opinion, properly be allowed to be in possession of or supply raw opium, nor to carry on the business of manufacturing or selling or distributing any of the drugs to which Part III. of the last-named Act applies:

Now, therefore, after consultation with the Council of the Pharmaceutical Society of Great Britain and in pursuance of the powers conferred upon me by No. 6 of the Regulations made under Section 3 and by No. 10 of the Regulations made under Section 7 of the last-named Act. I hereby withdraw from the said Walter Thomas Fuge the authorisations granted by the said Regulations to persons who lawfully keep open shop for the retailing of poisons in accordance with the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, to be in possession of and supply raw opium and to carry on the business of manufacturing, selling, or distributing the drugs to which Part III. of that Act applies.

E. Short,

One of His Majesty's Principal Whitehall, June 7, 1922.

Secretaries of State.

Contracts

Contracts

The following tenders have been accepted by the bodies named:

Blean Guardians.—The British Drug Houses, Ltd., drugs.

Cranbrook Guardians.-Mr. G. H. Moorhouse, chemist and druggist, Hawkhurst, medical appliances.

Whitby Education Committee.—Mr. J. Brooks, chemist and druggist, drugs, etc.

Dental Board

Applications have been received from the following persons on the grounds that they are pharmaceutical chemists or chemists and druggists, and that immediately

before July 28, 1921, they had a substantial practice in dentistry, in the course of which they personally performed such operations and gave such treatment, advice, and attendance as are usually performed and given by dentists. Any objection to registration must be lodged within one calendar month from June 15, and must be supported by evidence sufficient to show a prima facie case against registration.

1. Charnley, Arthur Walker, 27 Princess Street, Bury,

Lancs.
2. Dyer, Frederick Julian, 244 King Street, Sandwich;
Oakdene, Dover Road, Sandwich.
3. Finlayson, Daniel, 91 High Street, Sevenoaks.
4. Leavy, John, Mountmellick, Leix.
5. Leavy, Rosalie Mary, Mountmellick, Leix.
6. Lyons, John King, 308 Crumlin Road, Belfast.
7. McCarthy, Harry Yates, 165 Duckworth Street, Darwen.

arwen. 8. McFarland, Walter, Ballybofey, co. Donegal. 9. Pearson, William James, 1 Victoria Road, Woolston,

Hants.
10. Plumstead, Frederick George Edward, Church Street,
Attleborough, Norfolk.

Life-history of the Leech

"The Birmingham Post" of June 16 contains a lengthy article entitled "The Intelligence of the Leech." Written by "H. F." in a vein of popular science, it deals in readable fashion with reproductive and other changes in the life-history of leeches—all of which, by the way, are not capable of exercising a medicinal function. The following is an excerpt:

The cells of the girdle have secreted the delicate, trans-The cells of the girdle have secreted the delicate, transparent film which is to receive the eggs, and the leech attaches itself to the dish by means of its sucker, then extends the front portion of its body so as to loosen the cocoon and allow it to slip forwards. As it does so the process is aided, if necessary, by the movements of the animal, and in about a quarter of an hour the action is complete. It is now that the most wonderful part of the operation is performed. When the cocoon falls to the bottom of the dish the leech approaches it with its head and gently presses it on to the glass: then it works round and round, presses it on to the glass; then it works round and round, up and down, exactly as a laundry-maid does with a piece of linen which needs careful ironing. The movements are rhythmical, exact, and effective, for in due time the capsule is securely pressed down on the glass, and can only be removed with the utmost difficulty.

Miss Vera Knott, daughter of Mr. Herbert Knott, chemist and druggist, Blackburn Road, has been placed in the Senior Optimes Class in Part 2 Mathematical Tripos, Cambridge University. Miss Knott studied at Newnham College.

Several business changes have taken place in Bolton of late: Mr. T. Molyneaux has taken over the business of Mr. John Williams, 327 and 329 Halliwell Road; Mr. H. N. Lever has opened a pharmacy in Merehall Street; and Mr. S. Haywood has acquired the business of Mr. F. J. Charlton, 36 Queensgate.

Leicester

The cutting of the price of vacuum-flasks continues—1s. $7\frac{1}{2}d$. is the lowest offer noted so far.

A unique optical display is on view at Mr. Barker's A unique optical display is on view at Mr. Barker's pharmacy. A large magnifying glass is attached to the window, and the remainder of the glass outside the lens is covered with blue paper, the slogan being: "We do not magnify your eye defects." Other window-shows may be summed up as follows: Humberstone Gate Pharmacy, Lestrol; Mr. G. E. Marfitt and J. Young & Sons, Ucal health salt; four or five other shops, Sorbo sponges and Ovaltine and Ovaltine.

Liverpool

A Harrogate correspondent suggests that Liverpool pharmacists visiting the famous Yorkshire spa will be interested at seeing the prominence given to things photographic.

Mr. E. Norman Heath (Heath's (Liverpool), Ltd.), who has been seriously ill with double pneumonia and complications, is now out of danger and in a .air way to recovery. Pluck on his own part has materially contributed

Mr. Ralph G. Govier, Wallasey, the genial secretary of the Merseyside pharmaceutical Freemasons, has undergone a severe operation in a London hospital. Happily he is now making a good recovery, and hopes to be back at business in a few weeks' time.

The correspondent to whom "Xrayser II." refers in writing concerning the Pharmaceutical Society's Benevolent Fund (C. & D., June 17, p. 51), and who has been associated with Liverpool for many years, fully endorses the note on the Fund. The Newspaper Press Fund has never been troubled by interference with its management on the part of Presidents, Vice-Presidents, or generous contributors. The management is in the hands of a contributors. democratically elected council.

A case of stealing and receiving a bottle of morphine pills, value 2s. 6d., the property of Ayrton, Saunders & Co., Ltd., came before the stipendiary magistrate recently. The accused, Frederick Sims, foreman in one of Messrs. Ayrton, Saunders & Co.'s departments, and Sarah Ann Coghlan, described as a nurse with a Canadian qualification, were also charged, under the Dangerous Drugs Act, with being in unauthorised possession of the pills. It was stated for the prosecution that Coghlan was a drug addict. Both the accused were sentenced to imprisonment in the second division, Sims for four months and Coghlan for six months.

Manchester

Manchester pharmacists are requested to make a note of their Association's picnic fixed for July 5 (see "Coming Events," p. 129).

Mr. Nuttall, chemist, Great Western Street, Moss Side, has just returned from a holiday in the Isle of Man, feeling very fit and quite recovered from his illness of a month ago.

A huge rat was discovered in a washing-tank in the developing department of a well-known Manchester photographic chemist during Whit week. Fortunately it was dead and no films or plates were in the tank at the time.

Mr. A. Hershberg, pharmacist and optician, Cheetham Hill Road, has been having extensive alterations made in his shop. The optical department, which was partitioned off from the rest of the shop, has been transferred to an inner room.

An old lady of ninety-one years of age, who is a regular customer at a local pharmacy, gave the proprietor a shock the other day when she came in and asked him for "some medicine to give her an appetite." She also said that she thought the hot weather made her feel very lazy.

A scheme of advertising (which has been stopped by various photographic manufacturers elsewhere, on the ground that it amounts to selling their goods under protected prices) is being carried on by a firm of chemists in Manchester. To every purchaser of a certain camera they offer to develop and print the first film free of charge.

At a recent meeting of the Manchester Watch Committee it was decided to recommend that the early-closing provisions of the Shops Act should be more rigidly enforced, and that the arrangements for the working of these clauses be vested in the city police authorities. This was agreed to and sanctioned at a later meeting of the Manchester City Council.

A rather uncanny experience happened to a Moss Side chemist one day during Whit week. Just before closingtime he heard a terrific crash (similar in sound to the bursting of an electric lamp), but after over half-an-hour's investigation he was unable to fathom the mystery. The following day, on opening one of his stock cupboards, he discovered a 10-oz. bottle, which had contained liquor violæ pro syrupo, blown to bits, and the sticky mass all over the contents near by and down the back of the shelves below.

Sheffield

An attractive window-display is on view at the Glossop Road establishment of Eardley & Furnival.

Mr. H. Bown, Vice-President of the Sheffield Pharmaceutical and Chemical Society, has recovered from his illness, and is now back at business.

An appeal has been lodged against the decision of the Insurance Committee recommending the withholding of $\mathfrak{L}5$ 5s. from a local practitioner (C. d· D., May 6, p. 64). The case is to be heard on June 23.

Miscellaneous

POISON-LICENCE APPLICATION.—Mrs. Elizabeth Wingate, drug-store proprietor, Ewyas Harold, has applied to the Herefordshire County Council for a licence to sell agricultural and horticultural poisons.

Cost of Living.—It is estimated in "The Labour Gazette" that, on June 1, the average level of retail prices of all the commodities taken into account in Ministry of Labour statistics was about 80 per cent. above that of July 1914, as compared with 81 per cent. on May 1 and 176 per cent. on November 1, 1920. This month's level is the lowest recorded since October 1917.

CHEMISTS' PHOTOGRAPHIC COMPETITION.—A page of "The Carlisle Journal" of June 16 is occupied by the result of the photographic competition lately held by Thomas Ridley & Son (Chemists), Ltd., with reproductions of the winning pictures. The facing page of the same issue of the paper is filled with a well-planned advertisement by Messrs. Ridley, and the twofold appeal should be fully justified by results.

RISK FROM CELLULOID IN SHOPS.—In the course of the annual meeting of the Professional Fire Brigades' Association, held in London on June 15, Mr. W. Frost, ex-chief officer of the Sheffield Fire Brigade, expressed the view that restriction should be placed on the exhibition of celluloid goods in shops. It was, he added, a common practice to place celluloid toys in baskets on the floors of retail establishments, and it was possible that a lighted match might start a fire and cause a panic.

The "Pull" of co-operative societies.—The executive committee of the Imperial Commercial Association has passed the following resolution: "That in the opinion of the executive committee of this Association it is extremely desirable that the Government should, at the earliest possible date, pass legislation which will ensure that co-operative societies should be placed upon the same basis of taxation as limited liability companies." The committee is of opinion that the continued favoured treatment of co-operative societies in respect of taxation constitutes a grave menace to other traders.

a grave menace to other traders.

Drug-traffic cases. — At Woolwich Police Court, London, on June 16, Lo So Long, ship's fireman, was fined .0.) for importing and concealing 8 oz. of opium and 2 oz. of "opium residue."—At Grimsby Police Court, on June 16, David Davis, described as a bootmaker, was remanded on a charge of importing and concealing 100 "bottles" of cocaine, valued at £3,000.—At London Sessions, on June 16, a sentence of six months' hard labour passed recently on N. Wiseman (C. & D., May 27, p. 50) was reduced to one of two months', the accused's appeal against conviction being dismissed, with costs.

LIVINGSTONE COLLEGE.—Livingstone College commemoration day was held recently, when a number of friends gathered in the grounds of the college. The Secretary of State for Scotland (Rt. Hon. Robert Munro, K.C.) presided. The principal, Dr. Tom Jays, stated that fifty-one students of eight nationalities and representing twenty-six missionary societies attended the college during the vacation course in July and the present session. Over six hundred old students have gone to the mission field. Mr. R. L. Barclay, treasurer, reported on the financial position of the college, emphasising the immediate need of about £500. The chairman, in the course of his remarks, said that to send a man or woman to the mission field without even a smattering of medical knowledge was not only folly, but a crime.

Irish News

Brevities

At an arbitration court in Dublin recently Patrick O'Rcilly was awarded £49 for alleged wrongful dismissal, against Boileau & Boyd, Ltd., wholesale druggists.

At Coleraine Quarter Sessions W. J. Baxter & Co., Ltd., chemists, Church Street, have been awarded £3 18s. 8d. in an action against Mrs. S. B. Moore, Fortview, for goods sold.

Castlerea Board of Guardians has placed the contract for medicines with Whelan & Greville, Cork, and Boileau & Boyd, Ltd., Dublin, at a discount off the prescribed list of 25 per cent., and the contract for appliances with Fannin & Co., Dublin.

Belfast

The McMullan Cup presented to the golfers of the North of Ireland for competition (C. & D., June 17, p. 39) is the gift of Mr. Wm. McMullan, Belfast. (Corrected Notice.)

Among the firms which have recovered compensation at Markethill Quarter Sessions for goods destroyed by gangs of men who held up trains were Thomas McMullan & Co., and Elliott, Thompson & Blair, wholesale druggists.

At a meeting of the Belfast Chamber of Trade, recently, Mr. W. J. Hardy, Ph.C., asked if there was no means of educating the people in the London offices of the railway companies, that, when traffic was closed to Dublin, it did not necessarily mean that it was closed to Belfast. He had had repeated instances of delays from that cause. The "Belfast Telegraph," in commenting on this, stated that Mr. Hardy had performed a public service in drawing attention to the reductions orders issued by the railway companies in London regarding Belfast traffic.

The wave of incendiarism against business premises continues. On June 14 there was an outbreak of fire in the premises of Kinkead & Co., manufacturing chemists, Hamilton Place West, when the building was practically destroyed. On the same day a large block of offices and warehouses known as Floral Buildings, East Bridge Street, was fired by eight armed men. In a wing which escaped, the pharmacy of Mr. T. McGurk, Ph.C., occupying the lower corner floor, was damaged by water. The damage in the fire at the premises of Mr. Samuel Gibson is estimated at £17,000, and a claim for that amount has been lodged with the City Corporation (C. & D., June 10, p. 41).

The Medical Superintendent of the Tuberculosis Department of the Belfast Corporation has intimated that from July 1 free supplies of cod-liver oil emulsion and dressings cannot be had from the chemist, but must be obtained from the Tuberculosis Institute in Durham Street. Patients from the Shankill Road area at present cannot, owing to the disturbed state of that part of the city, go to Durham Street. "It is most unfair," says Mr. S. Hogg, Ph.C., 110 Shankill Road, "that those for whom the scheme exists should be so penalised." More might be said from the point of view of the chemist, he adds, but that he would leave to the local Pharmacists' Association.

Scottish News

Brevities

The premises of Mr. W. M. Elliot, chemist and druggist, Coldstream, were broken into on June 13. Some stamps and a small sum of money were taken by the intruder, who made good his escape.

At Dundee Sheriff Court, on June 14, a man named Darling was, under the Dangerous Drugs Act, fined £3. Allowed two preparations per week, he had, on eighty-two occasions, obtained heroin by false pretences.

Dr. J. F. Tocher, Ph.C., who was to have taken part in the story-telling competition at Aberdeen Rotary Club on June 15, was forbidden by his medical adviser from

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taking a leading part in the contest. A ballot resulted in Sir James Taggart being declared the winner.

Edinburgh Pharmacy Golf Club played a competition on June 14 over the course of the Craigmillar Park club, with the following result: 1 (captain's prize), A. Dunn: 2. R. G. Wright; 3. J. P. Gibb. In the ladies' section Miss Cowie and Miss Hastie tied for first prize.

Over 3,000 doses of the serum (C. & D., February 25, p. 49) by which it is hoped to immunise horses against so-called grass-sickness have been prepared in the Wellcome Research Laboratory and distributed free of charge throughout the areas in which the disease is common.

Fife

Mr. J. B. McLaren, chemist and druggist, Kirkcaldy, gained the second prize in the competition of the Fifeshire Angling Club held on Loch Leven on June 14, capturing eight trout, 5 lb. 10 oz.

At a recent meeting of the Finance and Property Committee of Fife County Council, Dr. W. Low, who had interviewed Mr. Dargie, county analyst, with a view to a reduction in his charges, stated that he had pressed for a 15 per cent. reduction, but Mr. Dargie pointed out that he could not submit to that. It was agreed to accept the analyst's offer of a reduction of 1s. per sample, from 15s. to 14s.

Glasgow

John Hamilton & Co., manufacturing chemists, have removed to 8 Anderston Quay and 94 Washington Street.

Mr. W. B. Reid, chemist and druggist, who was formerly with the Glasgow New Apothecaries' Co., has taken over the business of Mr. A. H. Jeffrey, chemist and druggist. 887 Govan Road.

David Waldie Memorial

As the whole of the money subscribed was not expended in the erection, in Linlithgow, of the David Waldie memorial plaque (C. & D., I., 1915, p. 760), to which a carved stone frame has recently been added, the subscribers were consulted regarding the disposal of the balance. It was decided to present a loving-cup to the town council of the royal burgh for use at such functions as the "riding of the marches." The cup, which takes the form of a mortar and pestle, is of solid silver, suitably inscribed. and contained in an oak case. The presentation took place on June 13.

"Maw" Challenge Shield Competition

The competitions between London chemists' associations for the challenge shield offered by S. Maw, Son & Sons, Ltd., were held on the company's sports ground at New Barnet on June 14 and 15. The M.C. was Mr. A. F. Porter, managing director of Messrs. Maw, who was assisted by a committee consisting of Dr. H. T. Maw, Messrs. Atkins, Deeth, Dobson, Elwell, Foster, Hearle, Keith, Kirkpatrick, Marns, Neve, Skinner, Shirtliff, Tocher, M. T. Maw, A. T. Maw, F. Weight, and J. W. Haynes, the judges being Mrs. Seymour, Mrs. Atkinson, and Messrs. Seymour, Still, Bowden, Morice, R. Jaques, and F. Jaques. The attendance on Wednesday, including representatives of Thames Valley, who had scratched for the competitions, numbered over 350, and on Thursday well over 500. Various events had been played off on the first day by the Croyden, Ealing, and South-Western Associations, the last-named running away in all events. A change came over the scene on the following day. The result often hung in the balance, and crowds gathered to watch the efforts of the various teams to snatch a victory. Finally everything depended on the tennis and quoits. The contest was fought between Walthamstow, the smallest and youngest association, and the Western, the

largest and oldest. The latter managed to win in tennis against the Northern and snatched five points from the golf, which gave them a commanding advantage; but Walthamstow went down gamely. Captain Deeth was warmly congratulated on the struggle his association had put up. The results were:

Tennis.—Final between Northern and Western, Mr. and Mrs. Cunnington against Mr. and Mrs. Roberts. Judge, Mr. P. C. Maw. After some keen play Mr. and Mrs. Roberts ran out winners for the Western by 6-3, 6-3, and thus claimed the full four points; three went to the runners-up and two to each in the semi-final, the South-Eastern and Walthamstow.

Golf.—The course proved a teaser to everyone, even the skilled golfers. It was 18-hole medal play, the two lowest scorers having to play off a 9-hole round for the first and second places. The result of the round was: (1) Mr. W. Main, Walthamstow; (2) Mr. Beaton, Western; (3) Mr. Barker, Western; (4) Mr. C. A. Macdonald, Northern. The first two played off and Mr. Main ran out winner by four up and two to play

Bowls.—The Northern, who were expected to run away on this green, only managed to gather a single point, having bitten the dust to the South-Eastern, who had never beaten them before. The final was contested between the latter and West Ham, the last ball of the match giving the winning point to the South-Eastern. The teams were :—South-Eastern: Messrs. Wilson, Ralph. Winzer, and Baker; West Ham: Messrs. Shenton, Pratt. Read, and Kirkpatrick.

Croquet.—This was won by the South-Western beating the Western, the semi-finalists being the Northern and Walthamstow. Mrs. Noble and Mrs. Wilkinson represented the Western, Mrs. Atkins and Mrs. Rees the South-Western.

Putting.—This was for nine holes, and was open to unlimited numbers, nearly all the ladies taking part. The results were: (1) Mrs. Deeth, Walthamstow; (2) Mrs. Wilkinson, Western; (3) Mrs. Gray, Walthamstow; (4) Mrs. McCrae, Walthamstow; (5) Mrs. Sutherland. South-Western.

Quoits.—This competition proved almost too difficult for most of the pharmacists present; but a few showed how easy it was, especially one member of the Western. The final was contested between the Western and Walthamstow, and was won by the former after an extra three ends had been played, the excitement being the outstanding feature of the whole of the contests.

The final results were as follows: Western, 21 points; Walthamstow, 17; South-Western, 9; Northern, 8; South-Eastern, 6; West Ham, 3; Croydon, Ealing, Eastern, and North-Eastern, nil. Early tea and later refreshments were served in the large marquee, and the shield was on view. The Barnet Excelsior Military Band discoursed music during both Wednesday and Thursday, and an excellent musical programme had been arranged for the evening. The artists were Miss Vera Siddons and Messrs. Millner, Rex Harald, and Bertram. Dr. Maw briefly addressed the gathering and pointed out how the shield came to be given and that it was up to the associations to arrange their programme in future years. The company would always be willing to come to their assistance if the associations so desired. He called upon Mrs. Maw to present the shield to the captain of the Western teams, Mr. W. E. D. Shirtliff, who responded on behalf of all the associations, thanking the Honse of Maw for the splendid way they had entertained them and encouraged what they had been trying to develop in London—namely, the sporting activities of their members. It should be remarked that Messrs. Maw is the only commercial house in the country with a private golf links. One or two diversions in the way of musical arms took place afterwards, when prizes were given to the successful. Great praise should be given to the M.C. (Mr. A. F. Pořter) and Mrs. Porter, Mr. Haynes, and their various assistants for the arduous work. The evening closed with the National Anthem.

Legal Report

A Deficient Mixture .- At Blackburn Police Court, on June 16, Mr. Arthur Taylor, chemist and druggist, 204 Bolton Road, was charged, under the Sale of Food and Drugs Acts, with selling a compounded drug "not composed of ingredients in accordance with the demand."
Dr. Daley, medical officer, giving evidence, said that the prescription was: Potassium iodide, 11 de.; sodium salicylate, 2 dr.; compound infusion of gentian, 2 oz.; water to 8 oz. The sample analysed was found to be deficient in potassium iodide to the extent of 28 per cent. Mr. H. Backhouse (defending): If the bottle containing this prescription was rather more than an 8-oz. bottle, that might make a difference?—Yes, a small difference. And if measured in a glass from which it was not carefully poured into the bottle, that also might account for a difference?—Yes, it might do. The Clerk: What is the price?—The ordinary price is 1s. Mr. Backhouse: It would have cost Mr. Taylor less than \(^3_4\)d. for the The total amount of potassium iodide he difference. uses a week is ½ oz. It was not denied for a many ways deficiency, but this could be accounted for in many ways. The chairman said the Bench felt it was very important that the greatest possible care should be exercised in these matters. A fine of 40s. was imposed.

New Companies and Company News

P.C. means Private Company and R.O. Registered Office

CHEMICAL UTILITIES, LTD. (P.C.).—Capital £500. Objects: To carry on the business of chemists, druggists, drysalters, oil and colour men, importers of and dealers in and manufacturers of all chemical, pharmaccutical, medicinal, industrial and other preparations, etc. R.O.: 50 Linsdell Road, Barking.

Austaker Manufacturing Co., Ltd. (P.C.).—Capital £2,500. Objects: To carry on the business of chemical manufacturers, dealers in perfumes, disinfectants, sand, oil, lubricants and sprays, chemical factors, chemists' sundrymen, drysalters, and manufacturers' agents, etc.
The first directors are: J. C. Whittaker, Avondale,
Fenber Avenue, South Shore, Blackpool; C. Hargreaves,
29 Leeds Road, Blackpool; and I. Sutcliffe, 14 Laverton
Road, St. Annes-on-Sea. R.O.: 378 Bloomfield Road, Blackpool.

M. Renier & Co., Ltd. (P.C.).—Capital, £1,000. Objects: To take over the business of Maurice Renier, Gloucester Mansions, Cambridge Circus, W., as manu-Gloucester Mansions, Cambridge Circus, W., as manufacturing chemists, druggists, sundriesmen, manufacturers and distributors of patent medicines, toilet preparations, surgical instruments and apparatus, etc. The permanent directors are: Dr. R. D. Nasmyth, 17 Westbourne Square, W.; V. Head, 44 Castlenau, Barnes, S.W.; and M. Renier, 17 Westbourne Square, W. R.O.: Gloucester Mansions, Cambridge Circus, London, W.

W. K. SIMPSON & Co., LTD. (P.C.).—Capital, £2,000. Objects: To carry on the business of manufacturers of and dealers in optical, surveying, surgical, nautical, astronomical, and scientific instruments of all kinds, watches, clocks, electrical, chemical and photographic apparatus, &c. The first directors are: W. K. Simpson, 58 Goddard Avenue, Hull, optician; F. J. Milestone, Marlborough Avenue, Hull, chemical manufacturer. R.O.: 38 Goddard Avenue, Hull.

ERADICUS, LTD. (P.C.).—Capital, £2,500. Objects: To adopt an agreement with G. W. Jones and R. N. S. Lewin to exploit and to carry on the manufacture and sale of the preparation referred to in the said agreement, and to carry on the business of manufacturers, buyers, and sellers of and dealers in all kinds of chemical preparations and drugs, etc. The first directors are: Capt. T. T. Waddington, Court Lodge, Sutton, and H. R. C. Blagden, 3 Ennismore Gardens, South Kensington, S.W. 7. R.O.: 4 Lime Street, London, E.C. W. M. Bell & Co., Ltd. (P.C.).—Capital, £2,000. Objects: To acquire the business carried on by L. S.

Woolf, trading as "W. M. Bell & Co.," at 2 Malvern Road, Kilburn, and to carry on the business of chemists, druggists, dentists, opticians, drysalters, oil and colourmen. dealers in photographic materials, scientific, surgical, and optical instruments, etc. The first directors are:

J. C. McCorquodale, 63 Glenmore Road, N.W. 3, and
T. H. James, 179 Lynton Road, Bermondsey, S.E. R.O.: 2 Malvern Road, Kilburn, London, N.W.

RECAMIER PRODUCTS, LTD. (P.C.).—Capital, £2,000. Objects: To carry on the business of manufacturers of and dealers in toilet requisites and soaps, chemists, manufacturers of and dealers in boxes and cases of card, wood, metal, or otherwise, etc. The permanent directors are:

A. Jones, Red Stacks, Highfield Road, Purley; A. Rawlinson, 3 Primrose Mansions, Battersea Park, S.W.; and Mrs. F. O. Cloud, 18 Emismore Avenue, Chiswick, W. R.O.: 21 St. James's Street, London, S.W.

G. B. Kent & Sons, Lid., have declared the usual dividend at the rate of $5\frac{1}{2}$ per cent. per annum upon the cumulative participating preference shares for the six months ended March 31, 1922.

J. C. & J. FIELD, LTD.—The report for the year ended March 31, states that the bank mortgage and loan have been paid off, the company now being free from a mortgage debt for the first time since its incorporation. Accounts show, after providing for repairs and depreciation, credit of £31,173. Deducting bank interest, income and corporation taxes, directors' fees, etc., there remains £16,201, plus £4,935 brought in. A divided of 101 results of 102 res dend of 12½ per cent, is recommended on ordinary shares, less tax, placing to reserve £5,000, carrying forward £4,452.

BRITISH DYESTUFFS CORPORATION, LTD.—The report for the year ended October 31, 1921, shows, after providing £467,106 for depreciation and crediting an estimated amount recoverable in respect of excess-profits duty, a profit of £437,684. The sum of £1,444,344 is written off profit of £457,064. The sum of £1,444,044 is written on stock values to reduce them to current market price, leaving a net loss of £1,006,660. Deducting from this £203,305 brought in, there remains a debit balance of £803,355 to be carried forward. For the previous year there was an available balance of £610,927, which included £58,827 brought forward. The full dividends were paid on the preference and preferred ordinary shares, and the balance of £203,305 was carried forward

PARKE'S DRUG STORES, LTD .- The report for the year ended February 28, 1922, states that the sum of £595 2s. 7d., required for the depreciation of leases, has been met, as usual, out of revenue, as well as $\pounds 1,572$ 10s. 7d. expended on repairs and renewals. The directors have appropriated out of the profits of the year £478 2s. 3d. to the fixtures depreciation reserve fund. After allowing for the above, the available net balance amounted to £7,453 0s. 10d., out of which has been paid an interim dividend on the preference shares at the rate of 6 per cent. per annum, less tax, and an interim dividend on ordinary shares of 5 per cent., less tax. The balance remaining is £3,262 4s. 5d., and from this the final dividend on preference shares for the year, amounting to £1,190 16s. 5d., was paid on March 20 last; and it is now recommended that a final dividend of $2\frac{1}{2}$ per cent., less tax, be paid on the ordinary shares for the half-year, making, with the interim dividend of 5 per cent., less tax, already paid, $7\frac{1}{2}$ per cent. for the year; leaving a balance of £571 8s. to be carried forward. The depreciation of stock, referred to in the report last year, has continued throughout the period under review, and this has materially affected the figures now presented. The stock has, however, been taken at market price or under, and while, as is common knowledge, the tendency is for prices generally still to fall, the directors do not anticipate any further serious depreciation during the current year. In spite of the prolonged general business depression, the sales are being well maintained, and the directors consider that the future offers brighter prospects.

Bankruptcy Reports

Re The Keene Company (Irving Alexander Keene, trading as), manufacturing chemists, 52 Gray's Inn Road, London, W.C.—A further sitting of the London Bankruptcy Court was held on June 16, before Mr. Registrar Francke, for the public examination of this debtor, whose accounts total liabilities £11,168 (unsecured £10,818) and assets valued at £2,046. Mr. Hansell, on behalf of the trustee, questioned the debtor regarding the American assets, and the latter denied that quite recently he had tried to dispose of his assets in New York, or that he had asked other people to do so on his behalf. he had not told anyone to refrain from writing to him because the Official Receiver was opening all his letters. Counsel handed debtor a letter to read, and asked him what, he meant by the sentence, "For the time being these measures should suffice." Debtor said he could not explain it. His brother had asked him to do what he could. His brother had told him that Mr. Gordon, an American barrister would look after his affairs. The American barrister, would look after his affairs. Registrar: Will you be frank with the Court, and tell us what instructions you gave your brother?—Debtor: Anybody would write to his brother and ask him to do what he could to help him. The Registrar: If you are not careful, your examination will be adjourned sine die, because you have failed to disclose your affairs. I want you to tell us what you wrote to your brother on May 2, and if you tell me you cannot remember I shall not believe you.—Debtor: I wrote my brother so many letters that I really cannot tell you what I said in that particular one. Counsel: You had assets in America, and you did not want the trustee to get hold of them. Registrar: You have opposed the trustee in every way; you even made him go to the Court of Appeal; and your conduct all through has been to endeavour to keep your assets from the trustee. You refused to give the trustee certain information until you were ordered by the Court. After some further questions, Mr. Hansell asked the Court to adjourn the examination sine die, because of the unsatisfactory nature of the debtor's replies, and his honour made an order in those terms, the debtor vehemently protesting that he was not being fairly

Re George Steven, trading as G. Steven & Co., 118 Chorlton Road, Old Trafford, Manchester, manufacturing chemist.—At the Salford Bankruptcy Court, on June 15, debtor appeared for his public examination. The statement of affairs showed that to meet ranking liabilities, amounting to £5,523, the debtor had assets estimated to produce £4,468. Against these assets there were certain preferential charges, leaving a deficiency of £2.552. The debtor regarded as the causes of his 4.2.562. The debtor regarded as the causes of his failure "shortness of capital and the slump in trade." In his examination the debtor said he was appenticed to a chemist in Edinburgh in 1898. He qualified in 1903, when he took a position in London, but returned to Edinburgh in 1905 to study further, and also to teach. In 1908 he passed the Major examination, and in October 1909 he became works manager for a wholesale firm in Manchester. In March 1918 he began business as a manufacturing pharmaceutical chemist in Chorlton Road. He borrowed £9,560 from one of his principal customers, and this was repaid by the following August. Asked by the Assistant Official Receiver (Mr. F. Murgatroyd) why he was required to repay so quickly, the debtor said the person who had granted the loan proposed to start manufacturing on his own account, and probably, if the money had not been repaid, debtor's place would have been taken over his head—he did not know. Most of his turnover for the first twelve months was in respect of business done with the person who lent the money. He was able to complete the repayment with money he had made with speculations. At the time there was a scarcity of commodities, such as saccharin and desiccated coconut; he knew where to get supplies, and was able to sell them again at a good profit. The Assistant Official Receiver: Do you mean to say that from the end of 1918 to August 1919 you made so much money in these other dealings as to enable you to pay off the loan?the records of the transactions in your books?-They were outside my business. No; although you were dealing outside your ordinary business, you were still a chemist. No; although you were dealing There is no reason why you should not have kept proper records of the outside transactions. Further questioned, the debtor said his motive was not to avoid payment of nncome tax or excess profits duty. He went on to say that his business as a manufacturing chemist was successful to the end of 1919. The chief trouble then was the increase in the price of sugar, which went up from £58 to £110 per ton, and there was a further rise in August 1920 to £161 per ton. The price of his products had to go up correspondingly; customers declined to order, and the business practically came to a standstill. The Receiver: That is equal to saying that sugar is the main constituent of the things you are making.-Debtor: It was in the case of peppermint tablets, for which I had a big business. Did things improve at all up to 1920?-No. Not in 1921?—No; in fact, my business is pretty well dead at present. You started manufacturing in March 1918. Your trading account up to March 1919 showed you made purchases amounting to £38,008, and your sales came to £39,387, and you only made a net profit in that year of £567?—Yes. That is not a large amount, is it?—It is not, but I was satisfied with it for the time being. The second trading account up to March 1920 shows purchases £28,429 and sales £36,545 your purchases had dropped by £10,000 and your sales your purchases had dropped by £10,000 and your sales by £3,000. Why did your sales drop £3,000 in 1920 compared with 1919?—Well, I had lost my biggest customer. For the next year your purchases amounted to £10,248 and your sales to £18,575—that is the worst drop of all?—Yes; in addition to losing my first big customer, I lost a large portion of the peppermint business. Your net profit for the year to March 1920 was £50, and for the next year you had a loss of £1,016?—Yes. With regard to the balance-sheets, the curious position is that, although you made a profit in curious position is that, although you made a profit in one year of £567 and the next of £50, in the third year there was a loss of £1,016, so that on balance there was a loss of £400 in those three years?—Yes. In fairness to you with regard to your present position, you have not written down very seriously the values of your stock, fixtures, and plant?—The value is there yet. When were you first sued for debt?—About September 1921. you first knew you were insolvent in April 1922?-I do not say exactly insolvent; I could not get money to carry my business through, but it was never quite carry my business through, but it insolvent. The examination was closed.

Deeds of Arrangement

Hughes, David, chemist and druggist, 42 High Street, Holywell. The creditors in this case (C. & D., May 27, p. 53) include Wyleys, Ltd., £29; Ayrton & Saunders, Ltd., £40.

Business Changes

Mr. F. Lockwood, chemist and druggist, has opened a pharmacy at 257 Manchester Road, Cowlersley, Huddersfield.

Mr. W. Duncan Wright, chemist and druggist, has purchased the business of Mr. C. Ellisson, chemist and druggist, 96 Market Street, Hednesford.

WILCOX, JOZEAU & Co., importers of foreign medicines, have removed their offices and warehouse to larger premises at 15 Great St. Andrew Street, London, W.C. 2. The telephone number is "Gerrard 2521."

HIEGENTLICH & Rose, manufacturers and merchants, 84 Singel, Amsterdam, have converted their business into a limited company under the style of Naamlooze Vennootschap "Hieros" (Hieros, Ltd.), the directors of which are Mr. L. Hiegentlich and Mr. C. J. Rose, jun.

City of London Public Health Report

The latest annual report of the medical officer of health for the City of London, covering the year 1921, has just been issued. It comprises 95 folio pages, and, as usual, contains several features of interest to the drug-trade. The thoroughness with which Dr. Howarth goes about his task may be instanced by the following passage from his citation of an official memorandum on encephalitis lethargica, a disease "of low infectivity":

There is no necessity to place restrictions on the movements of other occupants, provided they are frequently examined and remain well. Those in contact with the case, however, should be advised to use antiseptic nasal syringes or douches and to gargle the throat with solutions such as those advised for influenza. For example, any of the following: (1) One per cent. solution peroxide of hydrogen; (2) two per cent. solution of permanganate of potash, 1 in 5,000, in 0.8 per cent. solution of chloride of sodium (common salt); (3) liquor sodæ chlorinate 0.5 per cent. The solutions can be used as ordinary throat gargles or snuffed up through the nostril or applied by an efficient spray.

Some of the subjects that have been prominent in public health reports of late years are tending to assume less importance—e.g., venereal diseases and anthrax-infected shaving brushes. As for the former of these subjects, 758 new patients were admitted for treatment at the City clinic, compared with 1,053 in the previous year. The number of shaving-brushes destroyed up to December 31, 1921, is 13,224, the pattern numbers being 5238, 1736, 5024, 7065, 9011, 9013, 1223, 1224, 1224a, and 5907. Out of 148 samples of drugs taken, only three were reported against—two of boric acid ointment and one of Gregory's powder. The vendors were cautioned. In consequence of a suggested infection from vaseline, six samples of it were sent to Sir Frederick Andrewes, the city bacteriologist, for examination. After detailing the technique employed—which began with mass cultivation in broth containing chopped meat—Sir Frederick's report concludes: "I therefore feel justified in asserting the absence of harmful organisms, including anærobes, from these samples of vaseline and their receptacles."

FOODSTUFFS DISCUSSED.

On the subject of imported egg-yolk, imported "compound lard," and preservatives in imported fruit, the medical officer offers some pointed observations. Of the first-named he writes:

Action has been taken to prohibit the sale of boracised egg-yolk in small tins for domestic use, but it is permitted to be sold to large manufacturers who use it for confectionery-making only, where, in the finished product, the amount of egg used in proportion to the bulk is so small that the amount of boric acid can be regarded as negligible in amount. During the war yolk which possessed very considerable keeping qualities was submitted to me for examination, but no preservative could be discovered. More recently, a firm of City traders have submitted to me an egg-yolk possessed of similar keeping qualities, which, when submitted for examination, was found to be free from formaldehyde, sulphurous acid, sulphides, salicylic acid, boric acid, borates, benzoic acid, hydrofluoric acid, and fluorides. A portion of the sample was submitted to the Ministry of Health for their investigation. Apparently some new manufacturing process was being used, of the details of which I am unable to obtain precise information.

The result of the analysis of two samples of "compound lard," marked "Dutch produce," is as follows:

a, marked "	Dutch	prod	uce,	is as	tollov	7S:
				N	o. 1	No. 2.
				per	cent.	per cent.
Cottonseed oil					90	80
Stearine					10	20

I advised the sanitary committee of the possibility of the sale of this "compound lard" constituting an offence against the provisions of the Merchandise Marks Act, but as this seemed to be a roundabout process, the Ministry of Health and the Ministry of Agriculture were acquainted with the circumstances above referred to, and a recommendation sent that it should be made illegal to use the word "lard" in connection with preparations not consisting of lard or in which lard only constitutes a portion of the bulk,

The report continues:

if such preparations are intended as substitutes for lard and to be used for human consumption.

Four samples of fruit pulp have been submitted to the City analyst for examination for the presence of a preservative. The percentage of sulphur dioxide obtained from each is:

Sample	1S	strawberry	pulp	S O-2			per ce	
,,	2S	,,	,,	,,			per ce	
"	3S	22	",	"			per ce	
		raspberry		"	***	0.018	per ce	nt.
The me	edio	al officer a	dds:					

So far as I am aware, no other country permits the unrestricted importation of foodstuffs to which preservatives have been added, and I certainly think if present scientific knowledge is inadequate for the purpose of enabling regulations to be framed, or if doubt exists as to the harmfulness or otherwise to human beings of certain of the more commonly used preservatives, it is time that some investigation work was carried out to enable a definite position to be taken up.

RAT VIRUSES

One other passage in the report may be quoted: this has reference to the use of virus for rat repression. Dr. Howarth remarks:

Howarth remarks:

The subject of viruses first received attention and the virus used at the Central Meat Market was investigated in 1913 by the City bacteriologist, who reported that this particular virus was inert, though it was stated to contain a modified Loeffler's bacillus, possibly the Bacillus typhi murium of Loeffler. The virus question was again inquired into in 1920, when three samples were obtained. One proved to be identical with Gaertner's B. enteritidis, the second resembled Gaertner's bacillus, and the third was similar to the first. The conclusion arrived at, after considering the subject at some length, was that Gaertner's bacillus was not a natural inhabitant of the intestine of either rats or mice, but that both these animals might be infected by these organisms, and the result might be death or recovery, or the animals might survive as carriers. It was further suggested that there was a possibility of a carrier animal gaining access to food, and thus contaminating it. The question therefore arose whether the use of virus should not be prohibited.

No conclusion appears to have been reached on this question. It may, however, be urged with some justification that a report of this kind is not less valuable for the suggestions it contains than for its record of work done.

Personalities

At a meeting of the Rhyl Advertising Association, on June 13, tributes were paid to the work of Mr. P. J. Ashfield, chemist and druggist, who was re-elected President of the Association, for his work on behalf of the advertising of the town. It was stated that as part of the proceeds of his theatrical performances Mr. Ashfield had increased the funds of the Association by £26 14s. 9d.

Mr. G. H. Zeal, managing director of G. H. Zeal, Ltd., clinical thermometer makers, 82 Turnmill Street, London, E.C. 2, has just returned from a four months' trip to South Africa and India, having travelled over 26,000 miles. When in South Africa he visited the customers of his company and opened up new business connections. In India Mr. Zeal had to deal with an outrageous attempt to pass off inferior German thermometers as of his manufacture. The counterfeit thermometers were actually marked with the trade-marks and name of G. H. Zeal, Ltd., and great difficulty was experienced in tracing the consignments that had been distributed among Indian dealers. An interim injunction has been obtained in the Ccurts to prevent further supplies being offered, and it is hoped that the loss involved in the destruction of the counterfeit thermometers will teach the German importers that such trade trickery is not a paying proposition.

HUGE SERUM ORDER.—The Paris "New York Herald" states that the American Red Cross ordered half-amillion dollars worth of toxins and vaccines from the Pasteur Institute some months ago for Russian relief work. This order is the largest of its kind on record. The consignments are forwarded at the rate of about a ton a week, and the order will not be completed till July.

Westminster Wisdom

By the "C. & D." Parliamentary Representative

MEDICINE-STAMP DUTY

During the Committee stage of the Finance Bill in the House of Commons, on June 19, an effort was made to delete Clause 5, which deals with the war-time duties on proprietary medicines. The motion was defeated by 153 votes to 52.

THE PACKING OF POISONS

Mr. Rhys J. Davies asked the Home Secretary, on June 15, whether his attention has been drawn to the manner in which drugs and poisons are being packed by manufacturers, to the allegations that poisons are not properly described, and that insufficient time is allowed to the packers to do this important work properly; and whether he will cause inquiry to be made into the subject.

Mr. Shortt replied that he was informed by the Lord President of the Council, whose Department is responsible for the administration of the Poisons and Pharmacy Acts, that his Department have no knowledge of any allegations of the kind suggested. Perhaps the hon. member will communicate to the Department any information on the subject which he may have in his possession, but it will be understood that the Department has no power to intervene unless the provisions of the Acts or of the Regulations made under them are being infringed.

ALKALI WORKS REGISTRATION FEES

The House of Commons on June 16 agreed to the following motion dealing with the stamp duty on certificates of registration of alkali, etc., works:

That in lieu of the stamp duties chargeable on certificates of registration of the works mentioned in Sub-section (1) of Section 9 of the Alkali, etc., Works Regulation Act, 1906, there shall be charged duties at rates which shall be fixed by the Treasury after consultation with the Minister of Health and the Secretary for Scotland, and which shall be such that the duties levied under the said Act shall not exceed the amount required to neet the costs incurred in respect of the remuneration (including superannuation allowances) and expenses of the inspectors, and otherwise in connection with inspection under the said Act, and different rates of duty may be fixed as respects different classes of works.

Objections were raised to leaving the amount of the duty to be fixed by Government Departments, but these were overruled.

SAFEGUARDING OF INDUSTRIES ACT

Gas Mantles

In reply to Mr. Kiley, the Chancellor of the Exchequer, on June 15, said that in accordance with the award of the Referee, duty at 33½ per cent. is being levied on imported gas mantles in respect of the value of the mechanical aggregates of the oxides and nitrates of thorium and cerium ingredients of the mantles. Pending authoritative determination of the value of these ingredients delivery is being allowed, if the importer so desires, on deposit of a sum equivalent to the duty on a value of 25 per cent. of the value of the complete mantles, subject to any adjustment that may prove to be ultimately necessary.

Naphthalene

Mr. Kiley asked the Chancellor of the Exchequer, on June 15, why Hulse & Co., Woodlesford, who imported certain naphthalene balls, were compelled to deposit an amount of 33½ per cent. on them, while the same substance in the nature of flakes was allowed in free, seeing that at Goole the substance, both in balls and flakes, is admitted free, and, in view of their inability to obtain the refund of the money deposited, can he take some prompt action to give them satisfaction; and will he

issue instructions to his officials telling them clearly what articles are dutiable and what are not?

Sir R. Horne replied that the naphthalene balls and naphthalene flakes in question were submitted for expert examination, as the result of which the balls were found to be comprised of naphthalene of dutiable quality, whereas the flakes were found not to be of that quality. In these circumstances the duty cannot be refunded.

Glass Bottles

Mr. Foot asked the President of the Board of Trade, on June 12, why, since under Part II. of the Safeguarding of Industries Act, Section 2 (1) (a), it is not possible for an Order to be made imposing a duty on glass bottles imported from Holland so long as the existing commercial treaty between Great Britain and Holland remains in force, he has referred to a committee of inquiry a complaint and application in this connection.

Mr. Baldwin replied that the Treaty of 1837 between the United Kingdom and the Netherlands would prevent the imposition of a duty on Dutch goods under Section 2 (1) (b) of the Safeguarding of Industries Act, but not of a duty under Section 2 (1) (a), to which the application now before the Committee relates, so far as imports from the Netherlands are concerned.

Chemical Society

Ar the ordinary scientific meeting of the Chemical Society, held in Burlington House, London, W., on June 15, the President of the Society, Sir James Walker, F.R.S., in the chair, two papers were read. Dr. C. K. Ingold (with Messrs. E. A. Perren and J. F. Thorpe) presented a paper on Ring-chain Tautomerism. Part III. The Occurrence of Tautomerism of the Three-carbon (Glutaconic) Type between a Homocyclic Compound and its Unsaturated Open chair Isomeride, which constituted a continuation Open-chain Isomeride, which constituted a continuation of communications presented to the Society on former occasions, embodying the results of the further investigations carried out in this special field of research. The author discussed, with the aid of numerous slides showing the reactions and transformations in question, the conversion of various glutaconic esters into ring compounds, and then proceeded to deal in detail with the mechanism of this transformation of a tautomeric character. tautomeric changes are attributable to the fact that the compounds in question contain both residues which lead to Michel condensation, and these changes are reversible, the author designating them as cases of "self-condensation." It was found that the presence of piperidin accelerated the transformation in the Michel reaction, acting as a catalyst, and in this respect proved more effective than sodium methoxide. The equilibrium during such conversions was also discussed, and mention was made that while certain esters undergo self-condensation, others do not. In fact, the behaviour of these compounds led to the conception of a ring-compound opening and shutting, according to the equilibrium present, the changes involved being purely intermolecular. Miss E. H. Usherwood read a paper on The Tautomerism of Dyads. Part I. Experiments on the Patternerism of Dydas. Patt 1. Experiments on the Detection of Tautomeric Equilibria in Hydrocyanic Acid. The name of dyad had been applied to a small number of compounds, including hydrocyanic acid, which had been made the subject of special investigations with a view to elucidating their structure, and particularly that of hydrocyanic acid. Miss Usherwood discussed the isomeric changes occurring between HCN and HNC, developing the various equations bearing on this subject, and especially with the specific heats of tautomeric gases, the method employed in the investigations undertaken in studying the relationship existing in a system comprising hydrocyanic acid and its isomeride. As a result of these experiments, it was demonstrated that hydrocyanic acid consists of HCN and a small amount of its isomeride HNC, the result being based on the observations made in ascertaining the deviation of the specific heats of such a system.

Pharmaceutical Society of Ireland

Council-meeting

The monthly meeting of the Council of the Pharmaceutical Society of Ireland was held at 67 Lower Mount Street, Dublin, on June 13, Dr. A. J. Barnes, President of the Society, in the chair. The following members of the Council were also present: Mr. R. Blair (Vice-President), Mr. G. D. Beggs, J.P. (hon. treasurer), Dr. J. H. Walsh, Dr. J. A. Mitchell, Messrs. J. E. Connor, J.P., J. Michie, Charles E. Digges, James A. Doyle, A. H. Oliphant, Fred Storey, G. A. McLean Lee, John Smith, D. M. Watson, Victor E. Hanna, Wm. J. Hardy, and Samuel Suffern. THE monthly meeting of the Council of the Pharmaand Samuel Suffern.

RESIGNATION OF MR. W. F. WELLS

The Registrar (Mr. A. T. Ferrall) read the following letter from Mr. W. F. Wells:

Dear Mr. Ferrall,—After full consideration I have decided to retire from the Council. Please place my resignation before the President and Council at the June meeting of the Board, and oblige, yours very faithfully.

The President said this was a letter which, when he heard of it, caused him a good deal of personal regret, and he was sure that regret was shared by all the members of the Council. (Hear, hear.) With the exception of a few months in the year 1902, Mr. Wells had been a member of the Council continuously from 1882, when he was co-opted in the room of Sir William Whitla. That certainly was a long record of service given whole-heartedly in the interests of Irish pharmacy. It was long enough, too, to fix in the minds of members all over the country the name of W. F. Wells as being inseparable from the administrative work of their Society. To many, therefore, he should say, the suggestion of Mr. Wells' resignation was unthinkable, and personally he (the President) considered it was an event which should not take place if at all avoidable.

Mr. Michie proposed that Mr. Wells be asked to reconsider his resignation. Mr. Wells had done more for pharmacy than perhaps any man. He had studied the interests of the Society and its licentiates; he had been long a member of the Council, and he (Mr. Michie) felt sure that his resignation would be a very great loss to the Society, and particularly to the Council. He did not know what Mr. Wells' intentions might be, but he hoped he might change his mind and take his seat among them again. He was sure that it was the wish of every member of the Council that he should do so. (Hear, hear.)

Mr. Beggs seconded the resolution. Mr. Wells' resignation, he said, would be an irreparable loss to the Council, of which he was the oldest member. He was so familiar with the law of pharmacy that he was their law

Mr. J. E. Connor associated himself with the remarks made about Mr. Wells. Speaking as a country member he said that, if Mr. Wells resigned, pharmacy throughout the country would have lost its greatest mainstay. They looked upon him as the personification of law in connection with pharmacy in Ireland. When he was present at the Council-meetings they always felt that they were safe with regard to any points of law that might arise. His name had been so long associated with pharmacy that he (Mr. Connor) would consider it a calamity if Mr. Wells persisted in his resignation. He had very much pleasure in associating himself with the proposal to ask Mr. Wells to reconsider his decision.

Mr. Watson said he would like to support the proposal. He did not think there was any necessity to add anything to what had been said. Personally he would regret very much Mr. Wells' absence from that board.

Mr. Hardy said that, as perhaps the senior member from Belfast, he would like to support the resolution that Mr. Wells be asked to reconsider his decision. He would consider his resignation a distinct loss; and he was sure he spoke on behalf of his colleagues when he said that

Mr. Wells would be a distinct loss if he severed his connection with the Council.

The Vice-President associated himself with what had been said in reference to Mr. Wells. He thought it was inadvisable that Mr. Wells should resign at this time. The resolution was passed unanimously.

RESIGNATION OF THE HON. TREASURER

The Registrar read the following letter from Mr. George D. Beggs, J.P., hon. treasurer:

Dear Mr. Ferrall,—I write a few lines to say that I would ask you (if you think it right) to place my resignation as hon. treasurer on agenda for June meeting, so that my successor would be able to take up the matter for general meeting. We do not meet in August. I expect to leave Ireland in September.—I am, yours faithfully.

Mr. Beggs said that probably he should have made his resignation a resignation from the Council also, because he was leaving Ireland on September 1. He was going to reside in England. During the long time that he had been on the Council he had received more than kindness from all the members of the Council, and hc was very sorry that circumstances had arisen in which he was for-

saking his country and taking on to another.

Mr. Michie asked would it not be possible for Mr. Beggs to finish the year?

Mr. Beggs: I leave in September.

The President: I feel that we should only concern ourselves as regards his resignation of the honorary treasurership. I am sure he will be with us-

Mr. Beggs: To the last minute.

Mr. Watson: Perhaps Mr. Beggs will agree to hold office until his successor is appointed.

Mr. Beggs : Certainly.

The President said he was sure they were all deeply sorry to lose the most excellent services of Mr. Beggs as hon. treasurer He had filled the post with conspicuous ability. He had looked up the Calendar, and he saw that Mr. Beggs had held office for no less than nineteen years for one period of two years and for a second period of seventeen years. On the first occasion he was interrupted in his office by his appointment to the Presidency.

CHANGE OF ADDRESS, ETC.

Mr. J. Reidy, M.P.S.I., notified change of his address to the "Mall" Pharmacy, Tralee, co. Kerry.

The Registrar reported the deaths of Mr. G. McGuire, M.P.S.I., Dingle, co. Kerry; Mr. H. Bell, chemist and druggist, Waterford; and Mr. W. K. Young, R.D., Belfast.

PRELIMINARY REGISTRATION

The following, who submitted certificates from the Intermediate Education Board, were admitted to Preliminary registration:

Mr. Eugene McMahon, Killybrackey, Dungannon; Mr. Wm. Gallagher, 11 Beechwood Street, Derry; Mr. W. Creaven, Eyre Street, Galway; Mr. Wm. F. M. Keys, Lord Edward Street, Dublin; and Miss Sheila Deakin, The Pharmacy, Phibsboro', Dublin.

QUESTIONS

Mr. Hardy asked what was the position of the subscribers to The Chemist and Druggist who subscribed through the Pharmaceutical Society in connection with the free indemnity scheme.

Mr. Watson said THE CHEMIST AND DRUGGIST had agreed to give members of the Pharmaceutical Society the privileges of the scheme on the payment of an additional

10s to The Chemist and Druggist.

Mr. Connor said he had received complaints of illegal compounding and selling of poisons. He would like to know what the Society's inspector was doing at the present

The President said he thought definite complaints should be made to the Society through the Registrar, and then they would be dealt with automatically by the Law Committee. He thought he was right in saying that no complaint was neglected.

Marriages

JOHNSTON-JONES.-At Mostyn Road Wesleyan Church, Brixton, London, S.W., on June 14, John Rodney Johnston, M.C., only son of Mr. W. Johnston, Ph.C. (late secretary Chemists' Defence Association, Ltd.), and Mrs. Johnston, to Winifred Maude Jones, eldest daughter of Mr. and Mrs. Jones, Cormont Road, Camberwell, S.E.

SILLITOE—JAMES.—At Belmont Wesleyan Stoke, Devonport, on May 24, Arthur Leonard Sillitoe, chemist and druggist, Lee-on-the-Solent, Hants, son of Mr. W. S. Sillitoe, Sudbury, Suffolk, to Ada Lilian, second daughter of Mr. G. James, Stoke, late of Renmore, Galway.

SLATER-FATE.-At Skelton Parish Church, on June 14, Ronald Slater, F.S.M.C., F.I.O., M.P.S., son of Mr. J. M. Slater, chemist and druggist, Loftus, Yorks, to Dorothy, daughter of Mr. Fate, York House, Skelton-in-Cleveland.

Deaths

Montgomery.—At his residence, Antrim Road, Belfast, on June 16, Mr. Johnston Montgomery, Ph.C. (late of C. & J. Montgomery, 147 Royal Avenue), a



MR. J. MONTGOMERY, PH.O.

past-President of the Pharmaceutical Society Ireland. Mr. Montgomery served his apprenticeship in the pharmacy of J. & J. Haslett, Ltd., North Street, and $_{
m the}$ Licence examination in 1876. He then set up on his own account at the corner of Donegall and Street John Street, now merged into Royal Avenue. Here he carried on a steadily developing business, and when change in the thoroughfares mentioned had been com-

pleted by the civil authorities he built the premises at present occupied by the firm at the opposite corner. Mr. Montgomery took a deep interest in pharmaceutical matters, and was the first pharmacist outside Dublin to be elected President of the Pharmaceutical Society of Ireland. It was about that time (1903) that the accompanying portrait was taken. Later he became one of the founders of the Ulster Retail Drug Trade Association, and was its first President; he remained a Vice-President of the Association to the end. Mr Montgomery is survived by a widow and family; his son, Mr. John Montgomery, Ph.C., succeeded him on his recent retirement from business.

CHESTER.—Recently, after a brief illness, Mr. Charles Henry Chester, chemist and druggist, Station Road, Ainsdale, Southport. Mr. Chester, who qualified in 1894, commenced business in Ainsdale several years ago. He lived to see a rapid development of Ainsdale and its absorption, together with Birkdale, in the Borough of Southport. Mr. Chester was not in favour of the scheme of National Insurance dispensing, but, being the sole pharmacist in Ainsdale, gave it, under pressure, a short trial. He was highly esteemed, both by his *clientèle* and by a wider circle. Mr. Chester was a member of the Ainsdale Property Owners' Association, and was a prominent supporter of the local Wesleyan Church. He leaves a widow, two sons, and one daughter, with whom much sympathy is felt. The funeral took place at the Birkdale Cemetery

on June 15. In addition to the family mourners and a number of local public men, there were present the following members of the Southport Pharmacists' Association: Messrs. A. H. Messenger (President), A. S. Rollin (Vice-President), J. Righton, M. Harvey, R. Wilson, J. W. Gee, and W. E. Prescott.

Miller.—As briefly announced last week (C. & D., June 17, p. 49), Mr. George Miller, senior partner of J. & G. Miller, herb growers and distillers of essential oils, Mitcham, died on June 13, aged seventy-five. By the death of Mr. Miller, which occurred after an illness of several months, Mitcham loses the pioneer of an industry that has made the district famous throughout the world. For fifty years the business of J. & G. Miller has been carried on at the same spot, and Mr. George Miller died in the house he built and lived in for the last forty years. The oil distillery still stands on the spot where it was erected over fifty years ago, when the method of distilling was carried out by the old-fashioned pot stills and huge wooden vats with solid tin-worm coils for condensing. In 1910 a fire destroyed part of the structure, which necessitated rebuilding, and more modern types of stills were fitted with patent condensers, and capable of distilling 30 cwt. of herb at one charge with steam. The cultivation of of herb at one charge with steam. The cultivation of peppermint is also carried on by the sons, who have their own farms in Mitcham, Bromley, Swanley, and Chelsfield, the herb being distilled at Mitcham as hitherto. Mrs. Miller celebrated their golden wedding in 1920. They have forty descendants. Some years ago an account of a visit to Messrs. Miller's herb farm was given in The Chemist and Druggist (vol. 39, p. 403), and it is of interest to note that a £1,000 challenge made in 1891 for anyone who could prove that Miller's peppermint oil was tampered with has never been taken up.

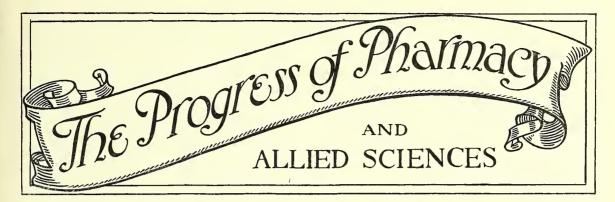
REYNOLDS.—At Long Sutton, Somerset, on June 15, Mr. Freshfield Reynolds, Ph.C., aged eighty-two. Mr.

Reynolds was born at Peckham in 1840, and was educated at the Friends' School, Bootham, York. He served his apprenticeship to the late Mr. E. Waller Martin, Guild-ford, from 1855 to 1861, and gained further experience as assistant to Mr. Quiller (Alsop & Quiller), Sloane Square, London, S.W. In 1862 he became associated in business with his cousin, the Richard Reynolds, Leeds, at first as manager of the retail establishment of Harvey & Reynolds, 13 Briggate, Leeds. After the retire-



MR. F. REYNOLDS, PH.O.

ment of Thomas Harvey in 1867 the shop at 14 Commercial Street, for the design 1867 the shop at 14 Commercial Street, for the design and arrangement of which Mr. Freshfield Reynolds was largely responsible, was opened. In 1874 he became a partner in the retail business, the style being changed to Harvey, Reynolds & Co. (now Reynolds & Branson, Ltd.). The partnership ended in 1882, when Mr. Freshfield Reynolds opened a new pharmacy at Harrogate, which he conducted until 1899. He took a great interest in surgical appliances and all the latest scientific developments. He appliances and all the latest scientific developments. He was also an active member of the local literary and scientific society, of which he became President. Impaired health compelled him to seek a somewhat milder climate with a less strenuous business life; he disposed of his business to Mr. Handford, and purchased a smaller one in Barton Street, Gloucester, which he carried on until his retirement in 1916. At Gloucester his garden was a never-failing source of delight. In 1911 he was President of the Cheltenham and District Chemists' Asso-Sutton at his eldest daughter's home. The interment took place on June 18 at the Friends' Burial Ground, Long Sutton. Mr. Freshfield Reynolds married, in 1865, Louisa Colebrook, Guildford; his widow, two sons, two daughters, and five grandchildren survive him.



PHARMACY

Extracting Cinchona.—In a contribution from the laboratory of Parke, Davis & Co., Detroit, W. L. Scoville ("Journal of the American Pharmaceutical Association," 11, 1921) states that cinchona bark is best exhausted by using 78 per cent. alcohol acidulated with 1.6 per cent. of hydrochloric acid. The acid is used in the initial maceration and in the first portion of the menstruum. Lactic acid was tried, but was not so efficient as hydrochloric acid. The acid was found to stabilise the fluid extract by reducing precipitation. The complete extraction of cinchona is slow and tedious, the last 10 to 15 per cent. of alkaloids comes out reluctantly, necessitating the use of a large quantity of menstruum.

Improved Aromatic Elixir.—With a view of overcoming the difficulties of obtaining a product which can easily be prepared and will mix without cloudiness with syrup, alcohol, and water, E. R. Jones ("Journal of the American Pharmaceutical Association, 4, 1922) proposes to employ terpeneless oils for making compound spirit of orange. The equivalent formula for the U.S.P. product is as follows:

Soluble Compound Spirit of Orange

	- F	~ [, -,	0.00,190	
Oil of orange, ter	peneless	· · ·			96ա
Oil of lemon, terp	eneless				48ոլ
Anethol					64ա
Oil of coriander		• • •			192m
Purified talc	• • • •	• • •		•••	$\frac{1}{2}$ OZ.
Alcohol					

Distilled water, each, a sufficiency to make 32 oz. Dissolve the oils and the anethol in 18-oz. alcohol, and add sufficient distilled water to make the required quantity. Add the purified tale and shake well for several minutes. Set aside for several days, shaking it frequently. Filter through paper in a well-covered funnel, and wash the filter with sufficient diluted alcohol to obtain the required yield.

Aromatic Elixir

· ·	22101110010				
Soluble compou	nd spirit	of ora	nge		1 oz.
Alcohol					8 oz.
Syrup			• • •		12 oz.
Distilled water	to make	• • •	• • •	• • •	32 oz.

Mix the soluble compound spirit of orange with the alcohol, add the syrup and then sufficient distilled water to make the required yield.

Wet Process Ointments.—The yellow oxide of mercury ointment is made by a wet process to ensure a perfectly smooth product for use on the eyes. E. R. Jones ("Journal of the American Pharmaceutical Association," 4, 1922) proposes to extend the principle to the preparation of ammoniated mercury ointment. The improved formula is as follows:

Ointment of Ammoniated Mercury

Mercuric chloride			108 grams
Stronger ammonia water			60 c.c.
Wool fat, anhydrous	• • •		280 grams
White petrolatum	**:		500 grams
Distilled water to make		1	$.000 \mathrm{grams}$

Dissolve the mercuric chloride in 2,000 c.c. of hot distilled water, cool and filter and add 2,000 c.c. of distilled water. Slowly and while stirring continuously, pour this solution into the stronger ammonia water previously diluted with 2,000 c.c. of distilled water. Allow the precipitate to settle and decant the supernatant liquid as closely as possible. Add 5,000 c.c. of distilled water to the precipitate, stir well, allow to settle and again decant the supernatant liquid. Repeat this process twice more or until the decanted liquid no longer contains ammonia. Transfer the precipitate to a suction filter and drain till the precipitate cracks. Remove and transfer to a tared mortar or suitable dish and add sufficient distilled water to make the moist precipitate weigh 220 grams. Incorporate it with the wool fat which has been previously melted and triturate till a smooth homogeneous ointment is obtained; then incorporate the white petrolatum.

Studies in Drug Extraction.—J. F. Couch 'American Journal of Pharmacy,' 419, 1921), in dealing with the thory of percolation, points out the desirability of obtaining more data as to the rate of extraction of various drugs. He states that previous work on the subject having been carried out when the standard strength of fluid extract was different, it is desirable to conduct fresh researches. The first series of experiments were conducted with *phytolacca*. The author found that the extraction proceeds in a regular manner but with diminishing velocity, so that the last portions of extractive require a considerable volume of menstruum for their removal. The rate of extraction is proportional to the total extract, inversely proportional to the residual extractive, the time, and an unknown factor or combination of factors. On account of these unknown factors a number characteristic of the extractibility of the drug cannot be assigned to it. It is probable that the unknown factors depend upon a change in the composition of the extract and a rise in the alcoholic content of the percolate. The first fifteen gallons of percolate contained colate. The first fifteen gallons of percolate contained 97 per cent, of the total matter extracted. A new factor encountered was that the alcoholic content of the percolate increases as the process proceeds. The finished fluid extract yielded the following data: Alcohol, 37 per cent.; extract, 32.54 grams per 100 c.c.; sp. gr., 1.0371. A further study with cascara sagrada ("American Journal of Pharmacy," 168, 1922) showed that the extraction proceeds regularly with diminishing valority. The factors proceeds regularly with diminishing velocity. The factors which determine the rate of extraction are those found in the study of phytolacca. The quantity of percolate equivalent to 300 c.c. per 100 grams of drug extracted 95 per cent. of the total extract. Cascara is somewhat more difficult to extract than is phytolacca.

Active Digitalis Infusion. — Discussing the relative action of tincture and infusion of digitalis in therapeutics, Weiss and Hatcher ("Journal of the American Pharmaceutical Association," 6, 1921) conclude that there is no essential difference in the amounts of the saponin bodies present in the tincture and in the infusion prepared from equal weights of the leaf, and therapeutic doses of digitalis do not contain enough to induce any undesired effects. The

method of preparing the tincture was found to extract all the active water-soluble principles of the leaf. Infusions of digitalis were prepared in different ways. In each case the marc was washed and dried, after which it was used for the preparation of tincture, and this tincture was tested on cats in order to determine to what extent the active principles had been extracted during the preparation of the infusion. The official infusion (U.S.P.) does not represent the drug completely; hence the standardisation of the leaf does not ensure uniformity in activity of the infusion. The variability of the infusion is at the expense of the more absorbable of the active principles. The infusion prepared according to the following method represents the activities of the leaf completely; hence it permits of uniformity when a standardised powder is used for making it. It may be used in place of the tincture in doses just ten times the volume of those of the latter, and it becomes a matter of indifference, so far as therapeutic effects are concerned, which is used. One part of digitalis in No. 60 powder treated with 100 parts of boiling water and kept for one hour in a boiling water-bath with frequent stirring, contains all the active principles of the leaf. This infusion is filtered through paper. The infusion filtered hot, and kept in completely filled and hermetically sealed bottles for more than two years and five months, retained its activity unimpaired, as shown by the results of tests on cats and by the therapeutic effects on man.

BACTERIOLOGY

Effect of Cyanine Dyes on Bacteria. — Browning, Cohen, and Gulbransen ("British Medical Journal," I., 1922, 514) report that certain of the cyanine dyes are extremely potent antiseptics—for example, sensitol red for staphylococci in watery medium. Selective antiseptic action as between staphylococcus and B. coli is exhibited to a higher degree by certain of these dyes—for example, sensitol red—than by any other compound hitherto investigated, the ratios of the sterilising concentrations probably being greater than 2,000 to 1 (with crystal violet the ratio is 500 to 1). Sensitol green is the most active of these dyes both in serum and watery medium for B. coli. Also, in the case of B. coli the antiseptic action in serum is more intense than in watery medium. Observations on the toxicity of these compounds for mammalian tissues and on the action of further members of the series are promised.

Stains for Blood Films.—Dr. H. M. Cade, bacteriologist to the East Suffolk County Council, pathologist East Suffolk and Ipswich Hospital ("British Medical Journal," I., 1922, 939), advises the use of Pappenheim's modification of the May-Giemsa stain in blood examinations. This stain is panchromatic, and can be regarded as a universal stain. It brings out the azure granules excellently. Two solutions are used: (a) May-Grünwald's eosin-methylene blue in methyl alcohol; (b) Giemsa's glycerin-alcoholic solution. Staining is carried out as follows: Pour on the film the May-Grünwald stain, allow to act for three minutes to fix, then add an equal quantity of distilled water and stain for one minute. Pour off stain and, without washing, add the Giemsa stain diluted to about 15 drops in 10 c.c. distilled water; allow to stain for fifteen minutes. Dry in the air. Dr. Cade states that he has used this stain extensively and finds it to be reliable; it stains the nuclei quite as well as the old hæmatoxylin method. Jenner's stain is useless for distinguishing the various kinds of cells; its only merit is its property of staining brilliantly the eosinophil granules.

Phenol-red Indicator.—H. C. Brown, of the Wellcome Bureau of Scientific Research, gives ("Lancet," I., 1922, 842) the following method of preparing phenol-red milk employed to demonstrate acid or alkali production in bacterial cultures: One part of "Ideal" milk is taken and added to 4 parts of tap-water; to 5 c.c. of this a few drops of phenol-red solution are added, and then N/10 NaOH is run in until the mixture is brick-red in

colour, then the calculated amount of N/1 NaOH is added to the diluted milk in bulk and sufficient saturated aqueous solution of phenol red to make the milk a vivid brick-red; provided that care is taken to stop the addition of alkali when the brick-red colour is reached corresponding to a PH of approximately 7.5, the subsequent production of acid or alkali by an organism in this medium will be clearly demonstrated. The medium is then tubed and steamed for twenty minutes on three successive days. Such a medium shows changes in reaction in a much more vivid manner than does litmus milk, and the production of an initial acidity, which is followed by alkalinity, as in the case of B. paratyphosus, B., is well demonstrated.

Stain for Phagocytes.—The following solution is recommended by H. B. Cross ("Johns Hopkins Hospital Bulletin," 32, 1921) for staining phagocytes and exudates:

Distilled water	 	 	100	c.c.
Glycerin		 	20	c.c.
Alcohol (95 per		 	20	c.c.
Phenol	 	 	2	c.c.
In this dissolve:				-

 Crystal violet
 ...
 ...
 0.06 gram.

 Pyronin
 ...
 ...
 ...
 0.20 gram.

The stain is ready for use without filtering, and it is stable if protected from sunlight and evaporation. Films are made and allowed to dry in air without heat or other fixation. Staining takes place in five to ten seconds, after which the preparation is washed with distilled water. Any excess of water is mopped up with blotting paper, but the film itself should not be blotted. The cell nuclei are stained violet and the cytoplasm of a uniform delicate lavender, the cell limits being well defined. Bacteria are a deep purple. Erythrocytes appear as pale lavender shadows. Plasma cells and mast cells exhibit a characteristic structure and stain darkly throughout, so that they are easily recognised.

ANALYTICAL CHEMISTRY

Detection of Beta-naphthol in Foods, etc.—The test (according to the "Jap. Journ. of Pharm.") is based on Riegler's method of detecting nitric acid in water. The authors make use of the fact that beta-naphthol in combination with sodium naphthionate and nitric acid gives a beautiful red colour. It is claimed that the presence of one-thousandth part of a milligram of beta-naphthol in a litre can be detected.

Sugar in Urine.—A simple test for sugar in urine is given in the "British Medical Journal" (I., 1922, 718), as follows: A drop of urine containing sugar evaporated on a microscope slide over the flame of a spirit-lamp leaves a "tacky" glistening film of syrup. Further heating turns this film a rich golden colour. Full heating converts the deposit into burnt sugar or caramel. Urine containing 14 grains to the ounce, according to fermentation test, gave the reaction after dilution with five times its volume of water.

Cocaine and Vitali's Test.—Certain authors state that cocaine yields the same intense violet coloration as atropine when submitted to Vitali's test (evaporating to dryness a particle of atropine with one drop of fuming nitric acid, then adding alcoholic potassium hydroxide solution). P. Hardy ("Union Pharm.") found that pure cocaine does not yield this reaction, which, on the other hand, is very apparent in the presence of iso-atropylcocaine, which occasionally occurs as an impurity in commercial cocaine, and is a particularly toxic compound.

Tyrosin Test for Pulmonary Tuberculosis.—In examining the sputum obtained from patients in an advanced stage of pulmonary tuberculosis, R. Monceaux ("Union Pharm.," May 1922) established in every instance the presence of tyrosin (p-oxiphenylaminopropionic acid). This result induced him to pursue his investigations, with a view to ascertaining whether tyrosin was a regular product

of the hydrolysis of pulmonary tissue. He describes the following test, which was adopted in the Hôpital Cochin, Paris: The sputum, expectorated during a period of twenty-four hours, is collected in a vessel not containing any disinfectant of the phenol group; the patient himself must not have taken any drugs belonging to the group. The sputum is diluted with double its volume of boiling water, and carefully triturated with a glass rod to hasten the solution of tyrosin, which is only with difficulty soluble in water. After ten minutes the whole is filtered, and 10 c.c. of the filtrate is collected in a wide test-tube; 3 to 10 drops of a glycerin maceration of Russula delica are added. After being well shaken, the mixture is allowed to stand at ordinary temperature. In the presence of tyrosin a light to dark brown coloration appears after a varying length of time. The mixture otherwise remains colourless. This test was found to be extremely accurate and yielded positive results when tubercle bacilli was demonstrable by inoculating guinea-pigs.

Metals in Aspirin.—Edward C. Merrill, of the United Drug Co., communicates the following test for heavy metals in acetyl salicylic acid to the "Journal of the American Pharmaccutical Association":

Place 10 grams (approximately) of powdered acetyl salicylic acid in a 300 c.c. Erlemmeyer flask of Pyrex or Jena quality, moisten with sufficient water thoroughly to saturate the mass without an excess of water being apparent. Close the flask loosely with ordinary cork or cover glass and allow to stand on a steam bath, at 90° to 100° C. for two-and-a-half to three hours. The development of a reddish colour on the lower surface of the contents in the bottom of the flask is an indication of the presence of iron. The development of bluish or greenish globules or consolidated blue spots upon bottom of flasks is a fairly reliable indication of contamination by copper

INDUSTRIAL CHEMISTRY

Methyl Bromide as Fire-extinguisher.—Henning ("Journal of the Society of Chemical Industry," 218 R., 1922) points out the dangerous nature of the fumes of carbon tetrachloride employed in fire-extinguishers. Much better results, he states, can be obtained from methyl bromide. Tests have shown that 10 parts of petrol flash when mixed with 15 parts of carbon tetrachloride, while there is no flash when 10 parts of petrol are mixed with only 2 parts of methyl bromide.

Sterilisation of Water.— Didier ("Schweiz. Apotheker Zeit.") recommends the use of ampoules containing solution of chlorinated potassium (eau de Javel) and of solution of hydrogen peroxide for sterilising water. The former is put up in amber-coloured ampoules of 1 c.c. and the latter in white ampoules of 1 c.c. The contents of a yellow ampoule (hypochlorite) are added to one litre of water, and after thirty minutes the contents of a white ampoule (hydrogen peroxide) are added. This removes the excess of hypochlorite.

Denatured Spirit for Perfumery—In the United States the authorities have authorised the use in perfumery of alcohol specially denaturised. The denaturant employed is diethylphthalate, C_sH_4 ($Co_2C_2H_5$), a colourless liquid, miscible with alcohol. To every 100 gallons of ethyl alcohol, $2\frac{1}{2}$ gallons of diethylphthalate is added. The presence of diethylphthalate is detected by the formation of fluoresceine on evaporating a residue with a small quantity of caustic soda, fusing, adding a trace of resorcin, and diluting with water.

Stability of Inks.—C. A. Mitchell, in the course of a series of three Cantor lectures on "Inks" before the Royal Society of Arts, dealt with the question of ink stability. To form an "ink"—i.e., a solution yielding with iron salts a permanent stain on paper, it is necessary that a compound should contain three hydroxyl groups in juxta-

position, and the same rule also applies to the inks formed with vanadium salts and with osmium tetroxide. Osmium pyrogallate yields an ink which blackens immediately, and is very permanent. The objection to the use of neutral chrome logwood inks is that no method of rendering them stable has been discovered, while vanadate inks turn yellow on the paper. In examining inks the main requirements to be considered are permanency of the writing and stability in the bottle or ink-pot. The British Government has now made specifications for inks, in which a minimum of 0.2 per cent. of iron is required for a fountainpen ink, and 0.5 per cent. for a standard ink for record purposes. The stability largely depends upon the proportion of acid used, and hitherto no official specification for this factor has been published. During the last three pears ink manufactures have been published. years ink manufacturers have had numerous complaints of the ink changing colour and forming deposits in the bottle, and this has been traced to alkalinity derived from the glass of the bottle. Ink, in oxidising, undergoes a change from a soluble tannate, first into a colloidal compound and then into an insoluble tannate containing 5.5 per cent. of iron (Wittstein), and, finally, there is an oxidation into a tannate containing 8.0 per cent. of iron (Pelouze), which is insoluble in very dilute acids.

Lawn Fertiliser.—Reporting on sulphate of ammonia as a weed-killer, the Experimental Station of the Rhode Island State College states that this method of reducing or eliminating weeds from lawns was developed there by a series of experiments extending over twenty years. All that lawn grasses require in order to grow at their best is that the soil be supplied with plenty of the three elements of fertilisers—nitrogen, phosphorus, and potassium. Most grasses and weeds also require that the soil be not sour; but some kinds which make an even turf grow well in an acid soil. The usual fertilisers employed for top-dressing lawns in the spring do not develop acidity, and permit the coarsely growing weeds to crowd out the grass. Nitrogen is commonly furnished in nitrate of soda, which tends to promote an alkaline condition. By substituting a similar amount of sulphate of ammonia an acid condition of the soil is gradually produced which weakens the weeds, while not affecting the fescue grasses. Thus in two or three seasons the weeds will entirely disappear, or in new lawns will never become troublesome. The phosphorus can be applied in superphosphate, and the potash in chloride of potash, as usual. Different soils require varying amounts of plant food; but a good proportion for the potash in the pot average conditions is 250 lb. of sulphate of ammonia. 400 lb. of superphosphate, and 250 lb. of chloride of potash to the acre. A smaller quantity than this should be used on newly-seeded lawns. A too heavy application of sulphate of ammonia will injure the grass as well as the weeds; but in the proportion noted it may safely be used as freely as the common lawn fertilisers. It is necessary that the fertiliser be distributed evenly when the lawn is dry in order not to burn the grass; and where convenient it is well to sprinkle the lawn thoroughly after applying the fertiliser.

Bentonite.—Raymond B. Ladoo ("Journal of the Franklin Institute," I., 1922) states that the name bentonite has been applied to a group or series of claylike materials characterised by an alkaline oxide and alkaline earth content of 5 to 10 per cent., fine grain size, high-absorptive powers, and usually very strong colloidal properties. It varies considerably in composition and physical properties. It is often light yellow, but may be cream to black. It is exceedingly fine grained, very plastic, and highly absorbent; when wetted it will absorb more than three times its weight or seven times its volume of water. Some varieties when wetted with water expand to more than six times (some experimenters report eight times) their original volume. The wetted material is exceedingly smooth and soft and feels like soft soap. Unlike most clays, bentonite is easily fusible at a comparatively low temperature. Some varieties when finely ground and thoroughly agitated with water will stay in



suspension indefinitely, forming a translucent gelatinous mass. The addition of small amounts of acids or sodium chloride seems to have little or no tendency to aid coagulation or settling. Other varieties go into suspension more easily, but settle out again. Some, and perhaps all, of the minerals of the bentonite group have the property of allowing easy replacement of the alkaline and earth oxides one with another. This property has been utilised for the softening of ccrtain types of hard water. It has been the softening of certain types of nard water. It has been mined in Wyoming, California, South Dakota, and occurs also in Montana, Arizona, Utah, Texas, Tennessee, Idaho, New Mexico, and British Columbia. It has been used principally in the manufacture of antiphlogistine, dressing for horses' hoofs, retarder in plaster, filler in paper and soap, as an adulterant in drugs and candy. In recent years its unusual properties have attracted considerable attention, and research work has been undertaken to study attention, and research work has been undertaken to study this material and to develop the best methods for its utilisation, especially by the Forest Products Laboratory of the Department of Agriculture, Madison, Wisconsin, in paper making and de-inking news print. Other uses suggested are as a filler for rubber, phonograph records, textiles, cordage, electrical insulation, and leather; in the manufacture of paint and adhesive paste; for dewatering crude petroleum; as a base for massage creams, printers' inks, and precipitating lake colours.

New White Pigments.—C. A. Klein ("Journal of the Society of Chemical Industry," 209 R., 1922) calls attention to the use of titanium oxide and antimony oxide as white pigments in place of white lead, zinc oxide, basic sulphate of lead, and lithopone. The production of stipnate of lead, and holopone. The production of titanium dioxide for use as a pigment was investigated simultaneously some ten years ago by Rossi and Barton in the United States and by Jebsen and Farup in Norway. Operations were started on an industrial scale in both countries independently, but since 1918 the two companies have worked in collaboration. In Norway the titanium oxide is extracted from a variety of ilmenite found near Egersund, of which 30,000,000 tons is estimated to be available. The ore is freed from associated minerals, and the concentrate, containing 47.5 per cent. of titanium oxide, is reduced to fine powder and mixed to a paste with concentrated sulphuric acid. On heating this mixture the mineral is entirely decomposed and converted into a "coagulated mass" containing sotuble sulphates of iron and titanium. This is extracted with water, and on heating the reduced solution nearly to boiling-point the whole of the titanium is precipitated as titanic acid. This is washed by decantation until free from iron, and allowed to settle. After removing as much water as possible the resulting pulp is passed into a rotary furnacc. where, in one operation, it is dried and calcined at a high temperature. The calcined product is finally pulverised and separated as impalpable powder by air-flotation. In practice barium sulphate is mixed with the solution before precipitation, and a small amount of calcium phosphate and barium carbonate added to the pulp before calcination. These additions are found to facilitate control of the calcination and ensure a more uniform product. In the calcination process the titanic acid is converted into cryptocalcination process the titanic acid is converted into crypto-crystalline titanium dioxide, which enters into physical combination with the barium sulphate. This composite product is known as titanium white to distinguish it from the pure oxide, and is marketed in two grades, "extra" and "standard," the latter consisting approxi-mately of 25 per cent. of titanium oxide and 75 per cent. barium sulphate. These titanium pigments are eminently suitable for the preparation of all classes of paint on account of their chemical stability and inertness. They are non-toxic, and are quite unaffected by any of the are non-toxic, and arc quite unaffected by any of the destructive agencies—e.g., sulphuric acid and hydrogen sulphide—to which paint is likely to be exposed. The manufacture of oxide of antimony as a pigment has been undertaken in Australia, antimony ore (from the Costerfield Mine) being used by the Australia. field Mine) being used by the Antox Syndicate, Ltd., of Sydney, for this purpose. The process is stated to consist in treating the coarsely crushed ore in a blast-furnace

from which the oxide passes in the form of vapour through three expansion cooling chambers, thence onwards to a collecting baghouse, where it is collected in the usual bag collectors. It is stated that by varying the temperature at which the plant is worked, the colour of the product can be varied from pure white to dull orange.

PHARMACEUTICAL CHEMISTRY

The Constitution of Rutæcarpin.—According to a recent article by Yakugaku Zasshi, rutæcarpin is said to be the alkaloid of the Evodia rutæcarpa, Benth. and Hook. After treating rutæcarpin with a solution of potash in amyl alcohol two substances were obtained, anthranilic acid and an amino-acid, determined as 2B-amino-ethyl-indol-3carbonic acid.

Solubility of Quinine Hydrochloride.—The fact is often overlooked in administering quinine hydrochloride in hypodermic solution that the salt is less soluble in the saline solutions with which it is generally associated. Crawford ("British Medical Journal," I., 1922, 874) gives the solubilities as follows: Distilled water, 1 part neutral hydrochloride in 35 parts; Ringer's solution, 1 in 110; salinc solution, 1 in 100. In the same communication the author notes that quinine and urea hydrochloride appears to possess no advantage as a substitute for acid quinine hydrochloride.

Emodin Test.—Eaton ("Journal of the American Pharmaccutical Association," 1, 1922) has examined samples of cascara preparations for emodin by the following method: following method:

Transfer 5 c.c. of the material to a separating funnel with 50 c.c. of water. Make acid with hydrochloric acid and shake out with 50 c.c. of ether, wash the ether with water, and extract it with a few c.c. of 10 per cent. ammonia solution. When a brown coloration obscures the test, shake out the ether, which is yellow in the presence of emodin, with water, then with a cold saturated sodium bicarbonate solution, and discard the aqueous layer. Shake out the ether with 10 per cent. ammonia. A pink colour in the aqueous solution indicates the presence of emodin.

Assay.—The Scientific Section of the American Drug Manufacturers' Association, after three years' research ("Journal of the American Pharmaceutical Association," 6, 1921), have reached the conclusion that the chemical assay of aconite for ether-soluble alkaloids is misleading and untrustworthy and should be abandoned. It was found that a physiological assay based on pure crystalline aconitine as a standard was efficient as a method of determining therapeutic activity of aconite preparations. Tests made with benzoyl-aconine and aconine indicated that aconitine is about 3,000 times as toxic as benzoyl-aconine and 4,000 times as toxic as aconine. Further comparative tests are to be made to ascertain the extent of agreement obtained in various physiological laboratories with samples of fluid extract and tincture of aconite.

Ash in Drugs.—The normal ash of hydrastis grown at the University of Minnesota was found to be between 3.5 and 4.5 per cent. There is very little difference between the normal ash of the roots and the rhizomes. It is suggested that in view of the difficulty in cleaning the drug the limit of 8 per cent. for total ash would be satisfactory. E. L. Newcomb ("Journal of the American Pharmaceutical Association," 11, 1921) states that the ash standard of 4 per cent. of the U.S.P. for buchu is too stringent. The same investigator has also arrived at the conclusion that the 5 per cent. limit in the U.S.P. for buchu is too stringent. Some well-gleaned Some well-cleaned for podophyllum is too stringent. samples were found to yield considerably more than 3 per cent. Shrivelled roots and rhizomes yield a high normal ash, whereas plump roots containing more starch yield a low ash.

Assay of Aconite Alkaloids.—The following method is recommended in preference to the French Codex process ("Journ. de Pharm. et Chimie," 1922, 25, 161-164), which is said to give low results: 5 grams of aconite extract is diluted to 25 c.c. with water acidified with 10 c.c. of 10 per cent. nitric acid; then 5 c.c. of liq. ammon. is added, and the liberated alkaloids are extracted with 100 c.c. of ether; two more portions of 100 c.c. each is used and four portions of 50 c.c. each of ether. The solution should be now free from alkaloids, and the last portion of ether is tested with Mayer's or Valser's reagent for the presence of alkaloids. The united ethereal solutions are extracted with dilute nitric acid and washed four times with water. Then 15 c.c. of a 5 per cent. solution of silico-tungstic acid is added, and 20 c.c. of a 10 per cent. solution of nitric acid. The precipitated alkaloids are collected on a filter-paper, ignited, and the weight of the residue multiplied by the factor 0.793 gives the weight of the alkaloids in the 5 c.c. of extract taken.

Estimation of Santonin in Artemisia Maritima.— Kariyone and Kimura ("Jap. Journ. of Pharm.") advise the following method: Ten grams of the powdered seeds is extracted in a Soxhlet apparatus with ether for three hours. The ether is recovered and the residue dissolved in 100 c.c. of a 5 per cent. solution of barium hydroxide. The solution is brought to the boiling-point under a reflux condenser, and after cooling carbon dioxide gas is passed through, and the solution is then filtered. To 80 c.c. of the filtrate 10 c.c. of a 15 per cent. solution of hydrochloric acid is added, and 20 c.c. of chloroform, the whole shaken for two minutes in a separating funnel, and the chloroform layer run off and filtered into a vessel. The acid solution is shaken with three consecutive portions of 10 c.c. each of chloroform, which are filtered in the same vessel. The filter-paper is washed with a few c.c. of chloroform, the united chloroform solutions distilled, and the residue dissolved in 30 c.c. of boiling alcohol. It is then exactly neutralised to phenolphthalein with decinormal sodium hydroxide, 20 c.c. of decinormal sodium hydroxide added, and after boiling for half an hour under a reflux condensor it is titrated with decinormal solution of hydrochloric acid, using phenolphthalein as indicator.

A blank experiment is carried out at the same time, using 20 c.c. of decinormal sodium hydroxide. The percentage of santonin is then calculated from the following formula:

Percentage =
$$\frac{S' - S \times 2.465}{8}$$
.

When S' is the number of e.e. of decinormal hydrochloric acid required by the blank, and S the number required by the sample.

Efficacy of Preservatives.—Gabel, in a paper read before the American Pharmaceutical Association ("Journal of the American Pharmaceutical Association," 10, 1921), records experiments made for the purpose of testing the efficacy of preservatives other than alcohol, acid, alkaline and neutral fermenting solutions (beef extract and senna leaves) were prepared, and definite amounts of preservatives added, and the medium inoculated with a gas-producing bacterium (such as *B. coli*). The amount of gas given off was noted. The preservatives found to be inferior were boric acid, cinnamic acid, sulphurous acid, sodium salicylate, sodium bisulphite, sodium benzoate, chloroform, and chloretone. Boric acid (0.4 per cent.) developed mould in acid solution, gas and mould in alkaline, and mould in neutral solution. Fermentation took place in 0.1 per cent. cinnamic acid. Due to its insolubility cinnamic acid is impracticable. Sulphurous acid (0.3 per cent.) proved ineffectual. Sodium salicylate and sodium bisulphite failed to preserve in 0.3 per cent. solution. Sodium benzoate (0.25 per cent.) preserved in acid solution, but fermentation took place in the alkaline and neutral media; 0.4 per cent. chloroform was not effective, mould forming in the acid and neutral, and gas produced in the alkaline solution; 45 per cent. glycerin could not be relied on in acid or neutral media, but was effective in

alkaline solution. Benzoic acid, salicylic acid, glycerin, alcohol, and formaldehyde were found to be the best preservatives. Benzoic acid was found to be a much better preservative than salicylic acid, though in alkaline media neither one is effective. Formaldehyde (0.05 per cent.) preserved in all the solutions, and it would be the ideal preservative were it not for other objections; 3.84 minims of formaldehyde to the pint would be sufficient. It was found necessary to use at least 15 per cent. of alcohol in acid and neutral and 17.5 per cent. in alkaline solution.

Examination of B.P. Ointments.—The following methods of analysis are suggested ("Analyst," 47, pp. 197-203): Cantharidin Ointment.—From 20 to 30 grams is dissolved in a mixture of equal parts of ether and chloroform, transferred to a separator, and washed three times with about 15 c.c. of a 5 per cent. solution of sodium carbonate. The mixed alkaline washsings are filtered, transferred to a separator, acidified with sulphuric acid, and extracted three times with chloroform (about 10 c.c. each time). The mixed chloroform washings are evaporated to dryness, the residue washed with two to three small quantities of a mixture of equal parts of petroleum spirit and dehydrated alcohol saturated with cantharidin, and the washings filtered through a plug of cotton-wool in a funnel, previously treated with chloroform and the petroleum spirit alcohol mixture. The cantharidin in the dish is then dissolved in chloroform (two or three small quantities), which passed through the cotton-wool and collected in a weighed dish. The chloroform extract is evaporated, and the residue dried in the desiccator and weighed as cantharidin. The B.P. ointment should contain 0.033 per cent. of cantharidin. Calomel Ointment.—Five grams is dissolved in ether, filtered through paper, and the paper washed with ether until free from fat, and dried. The residue, with the paper, is dropped into a stoppered bottle; 50 c.c. of 10 per cent. potassium iodide and 50 c.c. decinormal solution of iodine are added. After complete solution has taken place, the excess of iodine is back titrated with decinormal thiosulphate solution. Each c.c. of N/10 iodine = 0.0236 gram mercurous chloride. Creosote Ointment.—The percentage of creosote is determined, by loss in weight, when 1 gram of the ointment is heated on a water-bath. Eucalyptus Ointment is examined in the same way as the creosote ointment. Gall Ointment .-Two to 5 grams is extracted with petroleum ether in a Soxhlet apparatus, and the residue dried and weighed. The residue should be examined microscopically, and the part soluble in alcohol 70 per cent. may be estimated, if desired. Iodine Ointment.—Five grams is dissolved in chloroform, 50 c.c. of water added, and the free iodine titrated with decinormal thiosulphate solution (1 c.c. of decinormal sodium thiosulphate = 0.01269 gram iodine). The potassium iodide may be estimated by washing out the melted ointment with water, and after boiling the filtrate to remove any free iodine the potassium iodide is titrated with decinormal silver nitrate, 1 c.c. of which =0.0166 gram potassium iodide. The free iodine is =0.0166 gram potassium iodide. The free iodine is usually about 70 per cent. of that actually added. Iodoform Ointment.—Five grams is heated for two hours under a reflux condenser with 50 c.c. of decinormal silver nitrate solution, the condensor being occasionally washed down with a little water in order not to collect any iodoform. The solution is then cooled, diluted to 110 c.c., boiled, cooled again, and filtered, and 100 c.c. of the filtrate titrated with standard thiocyanate solution (1 c.c. decinormal silver nitrate = 0.01322 gram iodoform). Mercury Ointement.—Three grams is treated with nitric acid until the mercury is dissolved. The watery solution is separated from the fat and oxidised by potassium permanganate. The mercury is then estimated by titration with decinormal thiocyanate solution. Compound Mercury Ointment .- The mercury is estimated as above; the camphor by heating a known quantity on a water-bath and noting the loss, which is camphor. Resin Ointment.—
It is suggested that the acid value should be determined.

pera

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The possible range of acid value, calculated from its constituents, is 43.4 to 55.2, the average being 49.3. The following formula is given for the estimation of the approximate percentage of resin: $\frac{(a-5.9)\times 100}{167}, \text{ when } a \text{ is the acid value found. Sulphur Ointment is heated with concentrated nitric acid and bromine, the fat extracted with ether, and the sulphate precipitated by barium chloride. Tables are given with the refractive indexes of B.P. ointments and bases used for ointments.$

PURE CHEMISTRY

Blue Flame of Salt.—When common salt is sprinkled on glowing coal a blue flame is produced. Professor Arthur Smithells ("Nature," 745, 1922) points out that this is due to copper chloride, the source of the copper being probably in the pyrites of the coal. The blue flame is distinguishable from that of carbon monoxide, and appears very bright in contrast with the yellow-red glow of the fire.

Atractylol.—Gadamer and Amenomiya have described this sesquiterpene alcohol as being optically inactive. Takaji ("J. Ph. Soc., Japan," 1921, 473, 565) has isolated the alcohol from Atractylis ovata and found it to have a specific rotation -17°. By reduction with hydrogen, dihydoatryctylol was obtained. This is a colourless oil of specific rotation +14.9°, and boiling at 156°-159° at 14 mm. By dehydration it yields atractylene, a colourless oil boiling at 108°-109° at 3 mm., of specific gravity 0.9189 at 13°, specific rotation + 78°, and refractive index 1.51795.

A New Sesquiterpene Alcuhol.—Takaji ("J. Ph. Soc., Japan," 1921, 473, 565) has obtained from the essential oil of $Machilus\ kusanoi$ (Lauraceæ), a new sesquiterpene alcohol, $C_{15}H_{26}O$, which he has termed "machilol." It forms white, crystalline needles, melting at 79°-80°, boiling at 160° at 14 mm., which have a specific rotation +30°. It yields a dihydro-compound on reduction with sodium and alcohol, and a sesquiterpene, $C_{15}H_{24}$, on dehydration with formic acid. This body, machilene, is a colourless oil having a specific gravity 0.9109 at 23°, specific rotation +58.7°, and refractive index 1.51257. It is probably a mixture of two isomerides.

Constituent of True Coto-bark.—The active principle of this bark is cotoin, which has been synthesised ("Monatsh.," 42, 267). It is said to be a monomethyl ester, of 2.4.6-tri-hydroxy-benzo-phenone, and was synthesised by methylation of tri-hydroxy-benzo-phenone with diazomethane in an ether solution at 12° C. The product was found to contain 36 per cent. of cotoin, 26 per cent. of methylcotoin (2.4-dimethoxy-6-hydroxy-benzo-phenone), and 2 per cent. of the trimethoxy-compound. Experiments carried out on the methylation of 2.4 6-trihydroxy-benzo-phenone with methyl-alcohol and HCl gave no cotoin. Only methyl benzoate was isolated from the reaction product.

Universal Indicator.—A mixture of solutions of methylred, naphtholphthalein, phenolphthalein, bromothymolblue, thymol-phthalein, and cresol-red are used for the determination of hydrogen ion concentration ("Analyst.," 47, 196). It is claimed that the change of colours corresponds to the spectrum. The colour-changes cover a range of rH3 to rH11, the following being the corresponding colour for every rH: rH3=pale-red; rH4=red; rH5=orange-red; rH6=orange; rH6=yellow; rH7=greenish-yellow; rH8=green; rH9=greenish-blue; rH9.5=blue; rH10=violet; rH11=reddish-violet. The disadvantage of this indicator is the slight change of colour between rH9 and rH11.

Volumetric Estimation of Copper.—("Anal. Chim. Analyt.," 1922, 4, 99). The solution containing the copper (as sulphate) is evaporated to small bulk and treated with ammonium hydroxide NH₄OH drop by drop until the precipitate first formed just redissolves and the

solution becomes deep blue. A quantity of 98 per cent. alcohol equal to eight times the bulk of the solution is then added slowly; while stirring a precipitate of tetraminecupric sulphate, (NH₃)₄CuSO₄, is formed, which is filtered off, then washed with 98 per cent. alcohol, and rinsed back into the vessel with a little cold water; the solution is then diluted to 100 c.c., 3-4 drops of methyl-red added, as indicator, and the whole titrated with decinormal sulphuric or oxalic acid until the precipitate just redissolves and the solution changes from a greenish to a reddish-violet colour. Each c.c. of decinormal acid =0.001589 gram of copper.

Synthetic Indigo.—A new synthesis of indigo is described by G. C. Bailey and R. S. Potter ("Jour. Am. Chem. Soc.," 1922, 215). The authors used fumaric acid, prepared from maleic acid, as their raw material. Fumaric acid was converted into symmetrical dibromsuccinic acid by treatment with bromine and glacial acetic acid, under pressure at a temperature of 100° C. for seven hours. The dibromsuccinic acid was converted into symmetrical dianilidosuccinic acid by treatment with aniline. Three hundred grams of an equimolecular mixture of sodium hydroxide and potassium hydroxide was dehydrated by heating at a temperature of 450° C, for two-and-a-half hours in a closed agitated iron pot. Then 30 grams of sodamide was added, and a current of anhydrous ammonia was passed through the pot. Twenty-five grams of sodium dianilidosuccinate was added to the fused mass, and a temperature ranging from 230° to 240° C. was maintained for one-and-a-half hours. The resulting mass was dissolved in water, and air was blown through the solution. A precipitate of indigo formed and was collected on a filter. The indigo was 96.5 per cent. pure, and possessed satisfactory dyeing properties. The amount of indigo obtained was 60.4 per cent. of the theoretical yield from fumaric acid.

Eugenol and Iso-Eugenol.—A method of determining the composition of mixtures of eugenol and iso-eugenol by means of the melting-points of their benzoates has been devised by Phyllis Violet McKie, of Bangor University ("J.C.S. Trans."). Eugenol benzoate melts at 69°-70°, iso-eugenol benzoate at 103°-104°. The crude oil obtained in the isomerisation of eugenol is dissolved in pyridine and treated with some 25 per cent. excess of benzoal chloride. The major portion of the benzoates separates as a solid, and a further quantity on pouring the pyridine solution into dilute sulphuric acid. The solution is extracted with ether to obtain the last traces of benzoates. To ensure intimate mixture of the two isomerides the solid which separates is dissolved in the ether, which, on evaporation, yields the solid benzoate mixture. A curve was constructed, using pure eugenol and pure iso-eugenol benzoates. A well-marked eutectic point was observed at a temperature of 56.5°, corresponding with 25.5 per cent. of iso-eugenol benzoate. The following table shows the melting-points of mixtures containing various percentages of iso-eugenol benzoate:

Per Cent.	Melting-	Per Cent.	Melting
Iso-eugenol	point of	Iso-eugenol	point of
Benzoate	Mixture	Benzoate	Mixture
16.0	64.0°	540	(84.0°
29.0	65.8°	54.9	₹86.2°
32.0	69.4°	53.6	86.0°
35.0	72.5°	59.68	86.8°
40.0	79.7°	87.5	91 4°
46.5	82.7°	78.0	98.2°
51.5	83.6°	100	104.0°

DENTISTRY

"The Gazotherm" is the latest method of obtaining painless dentistry. The apparatus is the invention of Dr. Fabret, whereby oxygen at varying predetermined temperatures is projected upon the affected tooth, first at blood heat, and then the temperature is gradually lowered until the tooth becomes quite insensible to pain. The

conservative or other treatment is then carried out, and when the dentist is finished the process is reversed and the tooth is gradually brought back to the normal temperature. While it is claimed that this freezing process has no after-effects on the tissues, dental or otherwise, it is quite possible that bad effects might not show themselves until some time later. It would be advisable, therefore, until further evidence is forthcoming, to proceed with this local anæsthesia cautiously, and for each dentist to keep his patients under observation so that evidence for or against may be collected.

Mixed Gases in Anæsthesia.— Nitrous oxide and oxygen given by the nasal method, and controlled so that the patient is kept at the analgesic state without losing consciousness, is another method for the painless filling of teeth. It has been longer in use than the "Gazotherm" method, and although open to the same objection in rendering the tooth insensitive to all pain, and therefore requiring great care in preparing those cavities where the caries approaches the pulp, it has been found very effective, and is not liable to cause any degenerative changes in the tooth or the surrounding membranes.

Radiography has taken a definite place in the dentist's equipment. It has proved itself of great value in diagnosing many obscure conditions which formerly were treated in the dark. It is extremely useful in children whose teeth may be crupting out of place, or where the cruption of teeth is delayed, when the cause can be shown at once by taking a film of the jaw. Swellings can now be traced to their origin, whether due to abscess, odontomes, or otherwise. In this way the method of treatment can be decided upon at once, and the patient saved much suffering and the dentist much time and worry. The technique of taking radiographs can be soon learned, and there are several very useful apparatus on the market at the present time.

MATERIA MEDICA

Chief Constituent of Pharbitis Seeds.—Yakugaku Zasshi ("Jap. Journ. of Pharm.") isolated from pharbitis seeds a substance which is named "pharbitin." It was found to consist of ipurolic acid, rhamnose, and a glucosc.

Hsing-ch'nang (a Chinese Medicine).—Hsing-ch'nang is said to be the volatile oil of a plant, Coniodelium univitatum, Turez, from Hokkaido, extensively used in Chinese medicine. The author (Yoshiharu Murayama) obtained a substance which he calls "onidium-lakton," and claims that it is isomeric with sedanolid, described by Ciamcin and Silber ("Berichta," 30, 492, 1419).

Leche de Higueron.—Dr. Andrew Balfour, of the Wellcome Bureau of Scientific Research ("Lancet," I., 972, 1120), states that in Colombia and Venezuela the latex of Ficus laurifolia or F. glabrata, commonly known as "leche de higueron," is regarded as a specific for whipworm and hookworm infection. Dr. Balfour adds that the latex cannot be preserved so that it can be used in other countries than those in which it can be freshly prepared. Dried samples have been found to be inert.

Poppy-growing in Canada.—In the course of a discussion at a meeting of the Canadian Pacific Section of the Society of Chemical Industry ("Journal of the Society of Chemical Industry," 213 R., 1922) it was suggested that poppies might be grown in Canada for the legitimate manufacture of medicinal opium and its alkaloids. Two instances of the cultivation of poppies on a considerable scale were reported. In one case the growers, who were Germans, claimed that the poppies were being allowed to ripen for the seeds, which were used in the making of puddings. In the other case a Japanese had a field of ten acres, located in a remote part of the interior, entirely planted with poppies and surrounded on all sides with a deep border of tall sunflowers. The crop was destroyed by the Government.

Ergot from Algerian Diss and Oats.—G. Tanret ("Union Pharm.," May 1922) found that the diss plant (Ampelodermos tenax, Linck), which grows wild in Northern Africa, as well as the oats cultivated in Algeria, are extensively affected by ergot. He found that the same principles were present in both kinds of ergot as are contained in ergot from rye. However, the ergot from diss was found to be poorer in crystalline ergotinine, whereas the ergot from oats contained a larger proportion than the average found in ergot from rye. He concludes that the ergot from diss is to be rejected, except in times of very great shortage of ergot; on the other hand, ergot from oats is to be advocated, since it is capable of replacing the use of ergot from rye, and would constitute a fresh source of revenue for Algeria.

Muira-puama.—Dr. Heber W. Youngken ("American Journal of Pharmacy," 625, 1921) gives details regarding muira-puama (Liriosma ovata, Miers), which is employed in Brazil and France in the form of a fluid extract for the treatment of various nervous disorders. The drug has been shipped to the United States for the preparation of the fluid extract, which is then sent back to Brazil. In addition to the fluid extract there is in use by the French, pilula potentin co., containing one grain of the extract of muira-puama and one grain of ovolecithin in each pill. The pills are employed as a nerve stimulant and aphrodisiac in doses of three to six pills daily before meals. Another preparation is "Muiracithin," containing in 100 pills the residue evaporated in vacuo of 100 grams of the fluid extract, 5 grams of lecithin, and enough liquorice powder to make 100 pills. The dose given is three to four pills daily.

Alexandria Senna grown in India has been favourably received in the United States ("Journal of the American Pharmaceutical Association," 3, 1921). The leaves are unusually large, being 2.5 to 4 cm. in length, and the product was practically free from broken leaves and stems. The importations came to New York via London, and were grown by an American on his plantation in India from Cassia acutifolia pods shipped from the Sudan. The superiority of the Alexandria senna cultivated in India over that grown in the Sudan, in so far as size and purity are concerned, parallels exactly the improvement in quality which occurred in Tinnevelly senna when its cultivation was introduced in India from Arabia some one hundred and twenty-five years ago. In taste and odour these Indian leaves are equal, if not superior, to the Sudan leaves. The leaves, which are hand-picked, have the advantage over the Sudan leaves in being unbroken and practically free from stems and dirt.

Nauli Gum.—For several years past an oleoresin has appeared in commerce in London, resembling elemi, but packed usually in rolls surrounded with leaves. This resin came from the Solomon Islands, and is distinguished from all varieties of elemi by its distinctly anisic odour. This oleoresin was examined ("Bull. Imp. Inst.," XIX., No. 4, 457), and yielded 10.4 per cent. of volatile oil, 81.8 per cent. of resin, and about 3 per cent. of anisic acid and matter soluble in water. The amount of anethol, to which the anise odour is due, was calculated as approximately 34 per cent. of the oil. The resin was insoluble in solutions of caustic alkalis, but dissolved in 2 parts of methylated spirit. It gave a varnish which in a day or two became hard and lustrous, but was rather readily scratched. The oil is said to have only about half the flavouring value of oil of anise, and therefore only about half its commercial value.

American Ginseng.—Wong ("Journal of the American Pharmaceutical Association," 6, 1921), who has been examining the roots of American ginseng, Panax quinquefolium, obtained negative results as regards alkaloids, but one specimen showed the presence of a relatively small amount of an enzyme. An extract of the material, made with hot 92 per cent. alcohol and after the removal of the

solvent, was treated with a little water and the mixture extracted several times with ether. The ethereal portion showed a very small amount of a pale yellow essential oil, and a dark brown resinous substance, which reacted to the phytosterol reaction. The aqueous liquid was subsequently examined, and it was found to contain an appreciable amount of sugar, and a saponin, which, after purification, was a light yellowish white amorphous powder melting at 170-172°. It yielded an acetyl derivative, which was a dark brown mass melting below 100°. On hydrolysis this saponin was resolved into a pentose and a sapogenin which was of a darker colour than the original saponin melting at 188-191°. Experiments showed that the saponin is not toxic to animals or fish, and has no hæmolytic action.

Batiputa berries are the product of the sandy, rolling, coastal regions of the States of Parahyba do Norte, Rio Grande do Norte, and Pernambuco, Brazil, states C. R. Cameron, U.S. Consul at Pernambuco ("Commerce Reports," 1921), where they are prized for their oil, which is said to be equal to the best olive oil and is used for the same purposes as the latter, having both food and medicinal value. Batiputa berries are of two varieties, wild and domestic. Wild plants are said to average about 100 to the acre, but the distribution is very irregular, being dependent upon natural seeding. The shrubs are only 7 or 8 feet high, however, so that they would doubtless flourish if planted as close as 10 feet apart, or, say, 400 or more to the acre. Probably most of the land on which the batiputa shrub is found is owned by the State Governments, but considerable tracts have come into private possession. The batiputa lands are fairly well provided with transportation facilities. Part of the area is near railway lines, and a considerable part of the remainder is accessible by automobile and light truck, but pack mules and horses continue to furnish the standard means of transportation in the interior.

Salicin in British Columbian Willows,-R. H. Clark Salicin in British Columbian Willows.—R. H. Clark and K. B. Gillie, of the Chemical Laboratory, the University of British Columbia, Vancouver, report ("American Journal of Pharmacy," 619, 1921) on an examination of the salicin content of various species of willow and poplar native to the Province of British Columbia. The method of analysis was as follows: The bark was dried for forty-eight hours at a temperature of about 110°. Two samples of each, weighing 20 grams, were taken, and digested separately for three hours with were taken, and digested separately for three hours with boiling water and the solution filtered. Two grams of lead acetate was then added to the filtrate to precipitate the proteins, which were removed by filtration. excess of lead was then precipitated by the addition of the required amount of sulphuric acid, and the liquid filtered. To this filtrate was added 100 c.c. of the emulsin of almonds solution and the mixture allowed to stand sixty hours, at which time the solution was diluted to two litres and two portions of 100 c.c. were taken for analysis with Fehling's solution, the weight of glucose present being found by reference to Munson and Walker's tables (Leach's "Food Inspection and Analysis"). molecule of salicin gives on hydrolysis one molecule of glucose. The emulsin of almonds solution was prepared from sweet almonds, from which the oil had been pressed, as follows: The press cake was macerated for twenty-four hours with water, to which a small amount of chloroform was added. The mixture was then strained through a cloth and two drops of acetic acid were added per 100 c.c. of the liquid for the precipitation and removal of the proteins. To the filtrate was then added an equal volume of alcohol, 50 c.c. at a time, which caused the enzyme to come down as a fine precipitate, which was filtered off, washed with alcohol and immediately redissolved in water, to which a small amount of toluene had been added. The solution of emulsin of almonds so obtained was tested by treating solutions containing known amounts of pure salicin. It was found that the hydrolysis was complete

after sixty hours. The results obtained were correct to within less than 1 per cent.

Species	Autumn samples	Spring samples
	Average	Average
Salix Nuttalli	3.90%	4.49%
Salix Hookeriana	0.81	5.09
Salix sitchensis	2.80	7.38
Salix lasiandra	2.50	2.51
Salix purpurea		3.83
Populus trichocarpa	0.955	3.86
Populus tremuloides	3.77	2.45

MEDICINE

Treatment of Measles.—R. F. E. Austin ("British Medical Journal," I., 1922, 901) states that during the past sixteen years he has treated over 200 cases of measles without a single death by the use of the following measures: Avoid the use of all drugs other than aperients. Only allow drinks of water, diluted fruit juice, and whey sweetened with a little honey, till the temperature drops and the patient himself begs for something to eat; keep him in bed until the cough is gone.

Treating Common Cold.—At a meeting of the Royal Society of Medicine, Dr. E. P. Poulton mentioned ("Lancet," I., 1922, 816) a method of treating common cold by allowing a mixture of paraffin and vaseline to run from a funnel down each nostril. The treatment, he states, is of great value not only in preventing acute infection, but in helping to clear up chronic catarrhal infections of the nose and throat. It probably acts by forming a coat over the mucous surfaces, and is much more efficacious than an oily spray, because a much larger dose is employed. Enough vaseline should be added to the paraffin to make a thick viscous mixture that will run slowly out of the funnel. A proportion of 1 to 3 or 4 is about right, but less vaseline should be used in cold weather.

Strawberry Extract in Sprue.—An ethereal extract of strawberries is employed in the treatment of sprue. Castellani and Browning ("British Medical Journal," I., 1922, 718) give the method of preparing the extract as follows: Fresh strawberries are crushed with about 5 per cent, of their weight of absolute alcohol and filtered in a powerful filter press. The juice is then extracted for days in a continuous ether-extraction apparatus. The ethereal extract is immediately concentrated in a vacuum over phosphorus pentoxide, a small quantity of either starch or lactose being added. The residue is dried as completely as possible in a vacuum over phosphorus pentoxide, as this appears to ensure greater stability. The form of apparatus is illustrated in the paper. The extract (mixed with a little starch) is of a dark red colour, has a granular scaly appearance, is somewhat soft, and has a very powerful smell of fresh strawberries. It is given in 5-grain doses three or four times a day.

Hookworm Treatment.—In the course of an article in the "Lancet" (I., 1922, 1059), reference is made to the use of chenopodium oil in the treatment of hookworm. This has been recently advocated for the radical treatment of ankylostomiasis, especially in America. Its use is not unattended with risk. The maximum individual dose would appear to be 1 c.c., but it is best given in three cachets of 0.5 c.c. each at two-hourly intervals, followed three hours later by a saline purge of 1 oz. of magnesium sulphate. Experiments on carbon tetrachloride, now being carried out in Suva, Fiji, by Mr. C. Hall, senior zoologist to the U.S. Bureau of Animal Industry, would seem to indicate that in this drug we possess an anthelmintic of great potency. No exact information as to the precise dosage employed in Fiji is as yet available, but about 3 c.c. in gelatin capsules has been suggested. It is said that over 80 per cent. of the worms are expelled after a single dose.

Treatment of Pneumonia.—Following a paper by Dr. Arthur J. Mathison on the treatment of lobar pneumonia by potassium iodide and creosote, Dr. A. J. Manasseh ("British Medical Journal," I., 1922, 666) states that he has found these drugs a specific remedy for this disease. He has for years used the following mixture, and has always found it reliable in giving very satisfactory results in the minimum of time:

Potass. iod. 3j. Sp. vin. gallic. 3vj. Creosote 3ss. Aquæ 3xij. Ext. glycyrrhiz. liq. ... 3iv. Sig.: Two tablespoonfuls every four hours.

Within four weeks the above mixture was used at different periods of development in ten cases of lobar pneumonia. The temperature came down between the fifth and tenth days, and convalescence followed without any interruption. All hygienic measures were taken to ensure plenty of fresh air and sunshine to the sufferers.

New Therapeutic Use for Carvacrol.—The United States Public Health Service received a report recently on the possibility of using carvacrol as a substitute for thymol in hookworm diseases, which has been considered by A. E. Livingston, of the Hygienic Laboratory. Thymol and oil of chenopodium are the best-known remedies, but thymol is costly and, being imported, supply is uncertain. Oil of chenopodium is a variable substance, but its cost is low and the supply abundant. These, as well as all other vermifuges thus far used, may produce serious toxic effects or fail to remove the parasites. More satisfactory remedies are, therefore, needed. A method was recently devised by which carvacrol may be prepared from spruce turpentine, a by-product in the manufacture of wood-pulp. The supply of carvacrol is thus assured, its cost would be low, it is a liquid at body temperature so that it would probably come in close contact with the intestinal wall, and it is an isomer of thymol and possibly has a similar action on intestinal parasites. Experiments made on rabbits, etc., for the purpose of finding the relative toxicity of thymol and carvacrol, showed that these two drugs have practically the same toxicity on the animals used.

Salicin in Influenza.—Mr. E. B. Turner, F.R.C.S., in the "British Medical Journal" (I., 1922, 641), states that in the epidemic of influenza he treated fifty-four cases by the administration of large doses of salicin—20 grains every hour for twelve hours, and then 20 grains every two hours for the next twelve hours. The ages of these persons ranged between seventy-four and sixteen years. Four when seen had a temperature over 104°. The next day (with one exception, when the temperature was 99°) all the patients were normal or subnormal, and remained so; they were up and about the house the day after. There were no complications or sequelæ. Ten had temperatures of over 103°, of whom one the next day was 99.2°; the rest were normal. They ran the same course exactly. Thirteen had temperatures of over 102°, and were well in two days. Twenty-two had temperatures of over 101°, and fifteen over 99°. They all rapidly recovered without any drawback. In no single instance was there any bronchitis or pneumonia, nor was there any mischief left behind. These fifty-four cases follow in direct sequence more than 3,000 others which have been treated since 1891 in the same manner with the same results: no ill-effects from the salicin; no complications; no sequelæ; no deaths.

ESSENTIAL OILS

Cinicus Benedictus Oil.—The oil is described ("Chem. Zentralblatt.," 93) as semi-drying, similar in appearance to oil of hemp, and is used in the manufacture of soap and varnishes. It has the following characteristics: Sp. gr. at 15°C., 0.9255; refractive index (nD=25) 1.4653; acid value, 16.6; iodine number, 139.6; and saponification value, 196.5.

Oil of Andropogon Iwaranacusa.— Simonsen has investigated this oil, which he obtained to the extent of 1 per cent. on the quantity of the grass distilled ("J. Chem. Soc.," 1921, 1644). The oil had a characteristic odour of peppernint, and had the following characters: Specific gravity at 30°, 0.9203; refractive index, 1.4810; specific rotation, +51.7°; acid value, 0.7; saponification value, 12; saponification value after acetylation, 47.4; percentage of ketone, 77. The principal constituent of the oil is dextro-piperitone.

Oil of Agastache Pallidiflora.—Couch has investigated the characters of the oil yielded by the giant hyssop (Agastache pallidiflora (Heller), Rydb.), a labiate distributed throughout the mountainous regions of the Far West and Pacific Coast ("American Journal of Pharmacy," 341, 1922). The oil of the flowers has an odour resembling a mixture of thyme and peppermint. A yield of 0.316 per cent. was obtained from fresh flowering heads distilled at the time of full maturity. The constants obtained were as follows:

Sp. gr. at 20°... ... 0.91924 | Optical rotation ... -8.60° Refractive index 1.4865

Essential Oils of Hyssop and Satureja.—L. A. Sassard, in a thesis presented to the faculty of medicine and pharmacy of Lyons, gives the results of his examination of these two essential oils. The oils have the following characters:

011 of Boldo.—Rouse Bertrand Fils have examined the essential oil of boldo leaves, distilled from *Peumus Boldus*, and find it has the following characters:

From this oil they have isolated about 10 per cent. of phenols, which have not been fully examined. By extracting the distillation waters with petroleum ether, 20 grams of an oil was recovered, having, as would be expected, quite different characters from those of the oil obtained by direct distillation. This recovered oil had the following characters:

The oil is rich in phenols, but does not appear to contain any ascaridol. Terpineol may be present, but this has not been confirmed.

Wormseed Oil.—Producers of oil of American wormseed or chenopodium contend, states G. A. Russell ("Journal of the American Pharmaceutical Association," 4, 1922), the sp. gr. requirements of the U.S.P., 0.955 to 0.980, are too high, and should be lowered. It has been pointed out, however, that the lower the sp. gr. the less ascaridole is present in the oil. After experiments the author states that such a change is unwarranted, and that oil of wormseed can be produced that will meet all the U.S.P. requirements by distilling the herb with a large volume of steam during a relatively short period of time. It is recommended that with the apparatus now in use not less than 20 lb. of steam per minute be passed through the retort, and that the distillation time does not exceed fifteen minutes. For the rapid estimation of ascaridole in oil of wormseed, E. K. Nelson ("Journal of the American Pharmaceutical Association." 11, 1921) proposes the following method, which depends upon the fact that ascaridole is soluble in a mixture of 60 parts by volume of glacial acetic acid with 40 parts of water. Accordingly

all that is necessary rapidly to estimate ascaridole in oil of chenopodium is to agitate 10 c.c. thoroughly in a cassia flask, the neck of which holds 10 c.c. graduated in tenths, with 60 per cent. acetic acid. The flask is then filled to the mark with 60 per cent. acetic acid and allowed to settle, or carefully centrifuged. The volume of undissolved oil deducted from 10 and multiplied by 10 gives the volume percentage of ascaridole in the sample.

FIXED OILS

Maize Oil.—Baughman and Jamieson, of the United States Bureau of Chemistry ("Journal of the Franklin Institute," 555, 1922) give the following data of a sample of maize oil (corn oil) expressed from dry-process corn germs:

Sp. gr. 25/25-C 0.9185	Acid value	2.5
Refractive index 20° C. 1.4717	Acetyl value	10.0
Iodine number (Hanus) 117.2	Sat. acids (per cent.)	11.2
Sapon. value 187.3	Unsat. acids (per cent.)	82.5
Unsanonifiable (n.c.) 1.7		

The chemical composition of the corn oil was as follows: Glycerides of—

•						
		Pe	er cent.		P	er cent
Oleic acid	• • •		45.4	Lignoceric acid		0.2
Linolic acid			40.9	Unsaponifiable		1.7
Palmitic acid		***	7.7			
Stearic acid			3.5			99.8
Arachidic acid			0.4			

Safflower Oil.—Mr. J. S. Remington and Mr. A. Howard, who have investigated safflower oil, have recently issued their report [Bull. No. 124, Agric. Research Inst., Pusa, India]. Safflower (Carthamus tinctorius L.) is widely cultivated in India both as an oil seed and, to a much less extent, for the reddish dye in the flowers (carthamin). The crop is extensively grown in the driest areas of the Deccan for its oil seed. In this tract the oil is one of the most valued of edible oils, and the oil cake, when prepared after thorough decortication, is one of the most valuable and most-used cattle foods and one of the principal manures for sugarcane and other crops in Western India. After treating the seed in a benzene extractor a yield of 20.57 per cent. of oil was obtained with the following characteristics:

Sp. gr. at 15°.5 C 0.9258	Viscosity (Redwood)
Acid value 9.78	at 70° F245.8
Acidity (calculated as	Relat. viscos. (water =
oleic) per cent. 4.91	1) 8.4
Sapon. value 197.31	Unsaponifiable
Ester value 187.53	per cent. 1.25
	Glycerol , 4.26

Safflower oil has possibilities as a drying oil, and has been used in this way in India for many years. It is boiled by heating in earthenware vessels for about two hours, and it is then run into vessels partly filled with water. In these vessels the oil quickly solidifies to a gelatinous mass, which is sold as Afridi wax ("roghan"), and is used in the preparation of Afridi wax cloth. From the drying point of view it was seen that cobalt resinate furnished an excellent dryer for safflower oil. A drying oil, rather dark in colour, was made by heating 33 lb. of safflower oil and 1 lb. of cobalt resinate in an experimental oil-boiling tank for five hours at 300° F., and blown with air for two hours. This sample dried on yarnishes, it was found that the oil has certain noteworthy advantages over linseed oil. One of the most important uses for safflower oil would be in the manufacture of a soap which should be a suitable article for sale in India, as it could be guaranteed to contain no animal fat. Safflower lends itself very well to the process of bleaching, especially by an oxidising agent. If the oil is required for edible purposes, then bleaching should not be carried out by chemical means; resort should be made to fuller's earth and animal charcoal. Working according to the method outlined in the report, a nice sample of a

pale-yellow salad oil was produced on a laboratory scale. The meal is useless as a feeding material, and the best use technically it could be put to in India would be as a filler for soap, or as a slow-acting manure for agricultural purposes. The report concludes that safflower seed oil should become a very valuable economic product if it can only be brought over and utilised on the home markets, and further investigations are suggested.

PHOTOGRAPHY

Preservation of Diamidophenol Developers.—In a communication read before the Société Française de Photographie ("B.S.F.P.," 1921, 10, 291) L. J. Bunel states that lactic acid considerably delays the oxidation of developers containing diamidophenol without affecting their developing properties, and advocates the following formula: Water 1 litre, diamidophenol 5 gm., anhydrous sulphite of soda 30 gm., lactic acid (s.g. 1.21) 5 c.c. The author relates that a bottle, which was opened for use periodically, half filled with this developer, had only become about champagne-coloured in seven weeks.

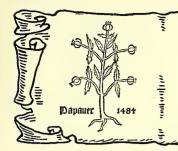
Effect of Borax on Developers.—The restraining effect of borax and certain similar salts, such as bicarbonate of soda and sodium phosphate, on developers is dealt with in communication 127 from the research laboratory of the Eastman Kodak Co. It was found that the restraining effect of borax is more pronounced when the developer has been made up with a caustic alkali instead of with a carbonate, and that with a bromided caustic soda hydroquinone developer the addition of sodium carbonate causes acceleration; that of trisodium phosphate causes acceleration likewise, while sodium succinate has no appreciable effect. The paradox of borax as an accelerator of development in certain cases and as a restrainer in other cases is explained by changes in active alkalinity produced by addition to the developing solution.

Combined Developing and Fixing Bath.—A combined developing and fixing solution with good keeping qualities, according to Lumière and Seweyetz ("B.S.F.P.," 1921, 7, 220), is prepared as follows:

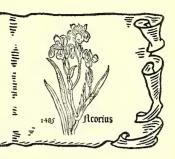
Solution A	Solution B
Water	Water 600 cm
Chloranol 6 gm.	Phosphate of soda (tribasic) 100 gm.
Chloranol 6 gm.	(tribasic) 100 gm.
	Hyposulphite of
soda 32 gm	soda 40 gm

For use take 2 parts of A and 3 parts of B. Plates and films developed with this solution, with few exceptions, do not require any different exposure from that given when separate solutions are used. Development requires about twenty-five minutes. It is unsuitable for bromide papers.

Golour-Sensitising Photographic Plates.— Photographic plates which are sensitive to blue, violet, and ultra-violet light may be rendered sensitive to other colours by the use of dyes. As the result of an investigation by the United States Bureau of Standards (Scientific Paper 422), the following method is suggested: Wash the plate for five minutes, and then stand for two minutes in the following bath at 18° C.: Alcoholic solution (1-1,000) pinacyanol 4 parts, water 100 parts. Rinse the plate in ethyl alcohol and dry. Films are best sensitised by standing for four minutes in the following bath: Water 65 parts, ethyl alcohol (95 per cent.) 35 parts, pinacyanol (stock solution) 4 parts, ammonia (28 per cent.) 2 parts. Rinse in alcohol for three or four minutes and dry. Dicyanin, which gives greater sensitiveness and extends further into the infra red, may be substituted for pinacyanol. The modern orthochrome plate sensitisers, such as pinacyanol, pinachrome, and homocol, are less sensitive to action of soluble salts in the emulsion than pinacyanol and dicyanin.



Practical Notes and Formulas



PREVENTING FREEZING IN RADIATORS

CHARLES H. LA WALL ("American Journal of Pharmacy," 97, 1922) states that 15 to 20 per cent. of liquid glucose added to the water used in the radiators of motorcars prevents the water freezing in winter. The glucose is mixed with enough warm water to dissolve it completely, and is then added to the remainder of the water in the radiator. The solution has no action on metals or rubber.

"Unofficial Formulas A.Ph.A."

On various occasions we have given selections from the formulas published in the "Journal of the American Pharmaceutical Association" which have been suggested as suitable for inclusion in an Unofficial Formulary to be published by the American Pharmaceutical Association. The following are some recipes recently published:

Compound	Salicy	lic Acid	ano
Zinc	Oxide	Ointmen	t
/ Fac	ama Oir	tmont)	

Salicylic acid	1.3	gram
Ointment of zinc		
oxide	8.0	grams
Hydrous wool fat	8.0	grams
Solution of cal-		
cium hydroxide,		
to make	60.0	grams

Compound Salicylic	Acid Gargle
Salicylic acid	15.0 gram
Alcohol,	

Alcohol,		
Spirit of nitrous		
ether,		
Distilled water,		
of each	30.0	c.c.
Oil of winter-		
green (methyl		
salicylate),		
Oil of clove, of		
each	2.0	c.c.

Compound Salicylic Acid Gargle with Formaldehyde

Glycerin, to make

2.0 c.c. 120.0 c.c.

To every c.c. of above add one drop of solution of formaldehyde. This gargle gradually darkens to a reddish brown, but its efficiency is not impaired. To use as a gargle add 1 c.c. to one-fourth of a glass of hot water.

Furniture Polish

I.		
Linseed oil	500.0	c.c.
Cedar wood oil	100.0	c.c.
Oil of turpentine	300.0	c.c.
Cedar leaf oil	200.0	c.c.
Carbon tetra-		

Directions for use.—Wipe off the furniture with a dry cloth; apply the polish to the damp cloth, and with it to the fur-niture. Rub well, and polish with a dry cloth.

11.	
Linseed oil (raw)	512.00 c.c.
Alcohol	24.00 c.c.
Antimony tri-	
chlorido (butter	
of antimony)	12.00 c.c.
Acetic acid, 30%	3.00 c.c.

Hydrochloric acid 3.00 c.c. Mix, and allow to stand one week before using.

Polishing Powder for Hard Metals

Infusorial earth	80.0	grams
Tin oxide	30.0	grams
Pipe clay	30.0	grams
Tartaric acid	3.0	grams
Powder and mix.		
II.		
Infusorial earth	28.0	grams
Pipe clay		grams
S o de i n m		-

Benedicts' Picrate Picric-acid Solution

3.0 grams 2.0 grams

hyposulphite ... Iron oxide ...

Powder and mix

Add 3.6 grams pieric acid and 40 c.c. of hot distilled water to 50 c.c. of a 1% sodium hydroxide solution. The mixture is shaken until the pieric acid is dissolved. After cooling the solution is diluted to measure 100 c.c.

Capping for Bottles

White	glue	 30.00 grams
Water		 45.00 c.c.
Glycer	in	 15.00 c.c.

Glycerin ... 15.00 c.c.
Colour to suit: zinc oxide for
dnll white, a trace of ultramarine blue may be added;
ammoniaeal solution of carmino
gives a transparent effect. The
tops of the bottles and corks
must be clean and dry. The
mixture should be kept on a
water-bath and the evaporation
of the mixture made up by careful addition of hot water. The
caps are trimmed, after the
caps give the state of the caps are the state of the caps are trimmed, after the
caps is thoroughly cooled, by
cutting with a sharp knife.

Nail Polish

ĺ	Talcum		554.00	grams
	Tin chloride		334.90	grams
į	Tragacanth, po	W-		
Ì	der	•••	1.10 (gram
	Carmine,	to		
ı	_colour			
ı	Water, to me	ake	1,000.00	grams
ı	Nail-moli	eb.	Pounder	

Nail-po	lish	Powder	
Talenm		334.00	grains
Tin oxide		666.00	
Carmine and	per-		-
fume a s	uffi-		
cieney			

37 - 47 707 - - - 7

21 00	it Dieuch	
Acid oxalic	16.0	0 grams
Perfume, a s	uffi-	
ciency		

Water, to make 1,000.00 c.c.

Camphor	Ice	
Liquid petrolatum	120.00	grams
Paraffin (128-130	760.00	
m.p.)	362.00	
White petrolatum	482.00	grams

Campho		W-		
dered	•••	•••	36.00 grams	
	Cold	$Cr\epsilon$	eam	
White	wax		126.00 grams	
Paraffin	(128-)	130	-	

m.p.)		94.00 gram
White	ceresine	
(145	m.p.)	35.00 gram:
Liquid	petrola-	STORES
tum	•	442.00 gram
- cum		442.00 graus

Borax, powdered Distilled water, 8.00 grams to make ... 1,000.00 grains

Vanishing Cream

,	0.00
Distilled water	747.50 c.c.
Borax	50.75 grams
Sodium carbonate	4.00 grams
Glycerin	64.25 grams
Stearic acid	130.00 grams
Tragacanth, pow-	

3.50 grams

White Lip Stick

White wax		300.00	gram
Spermaceti	•••	300.00	
Liquid petrols	tum	400.00	gram

Lip Rouge

Liquid 1	etr	olatum	389.00	gram
White w		•••	278.00	
Spermac		•••	278.00	gram
Carmine		•••		gram
Perfume	. a	sufficie	encv	_

Rub the carmine to a smooth paste with the liquid petrolatum, then add remainder of liquid petrolatum; melt the wax and spermaceti and add the carmine mixture. Run through an ointment mill.

Liquid Rouge

Carmine				gram
Distilled	W	ater	775.00	c.c.
Stronger	ar	nmonia		
water		•••	64.00	c.c.
Glycerin			110.00	c.c.
Perfume,	a	sufficier	ncy	

Liquid Face Powder Zinc oxide ... 54.00 grams

Bismuth			54.00	gram.
Distilled			807.00	c.c.
Glyeerin			67.00	e.c.
Perfume,	a	sufficien	сv	

Face Powder

Taleum	560.00	grams
China clay, dried	200.00	grams
Zinc oxide	100.00	grams
Zinc stearate	100.00	grams
Magnesium car-		
bonate	40.00	grams
Perfume a sufficien	0.77	-

Compound Talcum Powder

1			
Talcum		885.00	grams
Borie acid	•••		grams
Zinc stearate	•••	15.00	grams
	car-		
honate		60.00	grants

	Duouti	109 1	ouuc	•		
Menthol			5	.00	gra	ms
Thymol			5	.00	gra	ms
Boric ac					_	
dered				.00	gra	m
Perfume	, a su	fficier	ıcy		_	
Talcum,	to m	ake	1,000	.00	gra	ms
Pass t	hroug	hal	No. 8	0 s	ievo	

Dusting and Healing Powder

ı	Zinc oxide	356.00 grams
	Alum, powdered	88.80 grams
ı	Boric acid, pow-	
1	dered	444.40 grams
1	Mild mercurous	THE BIAMES
ı	ahlarida	88.80 grams
ı		oo.oo grams
	Liquefied phenol	22.00 grams

Antisentic Foot Powder

Boric acid			75 parts
Zinc oxide		• • •	5 parts
Sterilised tale			20 parts
Oil of euca	lyptus	or	oil of
thyme may be	added	7	

Foot Ointment

Lead plaster		100.0	
		120.0	grams
Peanut oil	• • •	20.0	grams
Petrolatum		90.0	grams
Berie acid		15.0	grains
Tannic acid		5.0	grams
Oil of melissa		g.s.	

Mange Remedy

Whale			500.0	c.c.
Oil of			60.0	c.c.
Crude	petrol	cum	30.0	c.c.
Precipi		sul-		
phur			30.0	grams
				•
		Garale		

	Phenol (liquid)	33.3	c.c.
	Spirit of pepper-		
	mint	33.3	c.c.
1			
	acid	33.3	c.c.
	Glycerin, to make	1,000.0	c.c.

Mouth Wash for Infants

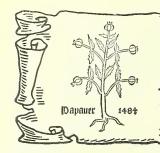
Sodium borate Sodium bicar-		48.0	grams
bonate			grams
Thymol		1.0	gram
Glycerin		250.0	c.c.
Anisc water,	to		
make		1.000.0	c c

Mouth Wash

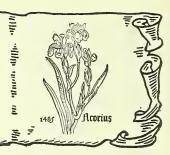
Thymol	1.0	gran
Eucalyptus oil		c.c.
Tincture of cud-		
bear	8.0	c.c.
Aleohol	300.0	c.c.
Water, to make	1 000 0	0.0

Compound Syrup Iron Malate

Crude malate of		
iron	10.0	grams
Cinnamon water	40.0	c.c.
Syrup of orange	200.0	c.c.
Tineture of cinna-		
mon	10.0	c.c.
Glycerin	240.0	c.c.
Syrup of rhubarb,		
to make	1,000.0	c.c.



The New Pharmacopæia of Japan



The fourth edition of the Pharmacopæia of Japan became the official standard on April 1, 1921, superseding the work issued in 1907, and, following precedent, an English translation has been prepared and is now published by the Pharmaceutical Society of Japan. In this connection it is interesting to note that, although the appearance of the translations of the third and fourth editions is separated by a period of fifteen years, both were issued during the term of office of the same President of the Society—Professor Dr. Wilh. Nag. Nagai. The translation presents itself as a well-printed volume of 534 pages; 83 pages more than the preceding edition. 83 pages more than the preceding edition.

The work opens with an historical introduction, reviewing the successive steps in the compilation of the three ing the successive steps in the compilation of the three preceding editions, since the year 1880, when Masayoshi Matsukata, the Minister of Home Affairs, suggested the elaboration of a National Pharmacopœia, which was materialised by the issue of the first edition in 1887, based on a draft originally drawn up in German. The preparation of the present edition was begun in 1915, when the first meeting of the Revision Committee was held and in a period covering five years and two months. held, and in a period covering five years and two months forty-three general meetings, ninety-four meetings of the chief members of the Committee, and twenty-seven meet-ings of the Committee of Publication, elected in 1919, were held, until the fourth edition was completed and submitted to the Minister of Home Affairs in May 1920. The Committee entrusted with the work of revision in-cluded twenty-three members, under the chairmanship of Dr. Wilh. Nag. Nagai, professor in the College of Medicine of the Tokyo Imperial University.

Additions in the New Work

Compared with the third edition, we note that seventy-three new articles have been added and ninety-four have been deleted, while as a result of inquiries and practical investigations about 1,400 alterations have been made.

The following preparations have been added to the Pharmacopœia:

Acetonum. Acidum diæthylbarbituricum. Linimenta. Æthylium chloratum. hydro-Æthylmorphinum chloricum. Agar-agar. Antipyrino-caffeinum Argentum colloïdale. Benzaldehydum. Benzolum. Bismutum jodatum subgalli-

cum. Calcium chloratum. Calcium lacticum. Capsulæ. Chloroformium pro narcosi. Cortex cinnamomi Loureirii. Electuaria. Emetinum hydrochloricum.

Emplastrum saponatum sali-cylatum. Emulsiones. Emulsio olei jecoris. Ferrum sulfuricum siccum. Folia scopoliæ. Herba swertiæ.

Hydrargyrum sulfuratum rubrum. Kalium sulfoguajacolicum. Lignum santali album.

Limonada citrica.

Liquor aluminii acetici. Liquor gelatinæ sterilisatus. Liquor hydrogenii peroxy-dati. Liquor jodi compositus. Liquor kali caustici. Liquor natrii chlorati physiologica. Liquor Ringeri. Methylenum cœruleum. Natrium thiosulfuricum. Oleum arachidis. Oleum pruni armeniacæ. Oleum tsubaki.

Limonada hydrochlorica.

P-aminobenzoyldiæthylaminoæthanolum hydrochloricum. Pastæ. Pasta liquida. Pastilli acidi acetylsalicylici. Pastilli chinini hydrochlorici. Pastilli kalii jodati. Pastilli stomachici. Phenolphthaleïnum. Pilulæ acidi arsenicosi. Pilulæ ferri et chinini. Pilulæ guajacoli carbonici. Pilulæ kreosoti carbonici.

Pulvis stomachicus. Pulvis zinci cum amylo. Pyoktaninum cœruleum. Radix polygalæ. Saturationes. Sirupus abelmoschi. Sirupus polygalæ. Spirituosa medicata. Talcum depuratum. Theophyllinum. Tinctura jodi diluta.

Todaiwo. Tropacocainum hydrochloricum.

Unguentum argenti colloidalis. Unguentum basilicum. Unguentum camphoratum. Unguentum Wilkinsoni. Unguentum Wilsoni. Vaselinum flavum.

OMISSIONS

The following articles, which were included in the third edition, have been omitted in the new work:

Acetum aromaticum. Acetum scillæ. Acidum carbolicum crudum. Albumen ovi siccum. Anetholum. Aqua amygdalarum amararum. Aqua anisi. Aqua carvi. Aqua picis. Arsenum jodatum. Carrageen. Carvonum. Chininum bisulfuricum. Collemplastrum. Cortex mezerei. Extractum aconiti napelli.
Extractum cardui benedicti.
Extractum cascarillæ. Extractum physostigmatis. Extractum phytolaccæ. Extractum ratanhiæ. Flores arnicæ. Flores chamomillæ romanæ. Flores malvæ. Flores rosæ Flores sambuci. Flores tiliæ. Flores verbasci. Folia althææ. Folia belladonnæ. Folia bucco. Folia coca. Folia farfaræ. Folia melissæ. Folia trifolii fibrini. Fructus carvi. Gossypium carbolisatum.

Gutti.

Kino.

Herba cardui benedicti.

Hydrargyrum cum creta.

Liquor ferri albuminati. Liquor ferri oxychlorati. Liquor nitroglycerini.

Magnesia usta ponderosa.

Magnesium carbonicum ponderosum. Mel rosatum. Nitroglycerinum. Oleum hyoscyami. Oleum juniperi. Oleum lauri. Oleum myristicæ æthereum.

Oleum resinæ empyreumaticum. Oleum sabinæ.

Oleum sabınæ.
Oxymel.
Oxymel scillæ.
Paraldehydum.
Pastilli acidi borici.
Pastilli ferri lactici.
Pastilli kalii chlorici.
Pastilli manthæ. Pastilli menthæ. Pastilli natrii bicarbonici. Pilulæ aloës et asæfætidæ. Pilulæ chinini sulfurici. Pilulæ colccynthidis hyoscyami.

Blaudii. Pilulæ Pilulæ hydrargyri. Pulvis ærophorus laxans. Radix gelsemii. Radix phytolaccæ.

Radix ratanhiæ. Radix serpentariæ. Resina dammar. Semen. tonco. Sirupus croci. Sirupus sennæ cum manna. Sparteïnum sulfuricum. Species laxantes. Species pectorales. Spiritus juniperi. Tinctura aloës.

Tinctura gelsemii. Tinctura lavandulæ posita.
Tinctura ratanhiæ. Lapis pumicis. Lignum santali rubrum. Liquor arseni et hydrargyri jodati. Tinctura scillæ. Tinctura serpentariæ. Unguentum paraffini. Unguentum stibiatum. Unguentum sulfuratum. Veratrinum.

Vinum stibiatum.

NEW FEATURES

The Pharmacopœia presents several new features, many of which have been embodied in the introductory notes. Normal temperature is defined as 15°, while 15° to 20° represents ordinary temperature; tepid (lukewarm) water is water at a temperature of 30° to 40°, while warm water applies to water at a temperature of 60°

to 70°. All parts mentioned in formulas refer to parts by weight, following the Continental practice. Brief descriptions of the methods of determining the melting-point, congealing-point, acid value, ester value, and iodine index of official substances are included in the introductory notes, supplementing the details given in each article. In the case of essential oils the optical rotation is now prescribed as an additional test, a feature not contained in the preceding edition. Those medicines which must be stocked in every dispensary are designated by a ring against the title. Unless otherwise stated it is understood that qualitative tests are to be carried out with 10 c.c. of the solution containing the substance to be tested, using a test-tube with an internal diameter of about 1.5 cm.

The titles of the single monographs are in Latin, the Continental form being retained in the present edition, e.g., Chininum, Kalium, Natrium, Radix Senegæ, Kalium Bromatum, followed by the corresponding English designation. In the case of chemical substances the empiric formula and molecular weight, based on the atomic weights of 1916, are given. Contrary to the practice adopted in other Pharmacopæias issued during the past years, no mention is made of the impurity or impurities to be detected by each given test, nor where volumetric determinations are required is any indication afforded of the amount of alkaloid, etc., corresponding to 1 c.c. of the volumetric solution employed in carrying out the required assay; also no special tests have been included for ascertaining a definite limit of arsenic or lead, a requirement which forms a distinctive feature of the last edition of the British Pharmacopæia.

NOTES ON THE MONOGRAPHS

In the following notes on the single monographs only the more interesting innovations, as well as the more important points of divergence from the corresponding requirements or standards established in the British Pharmacopoeia, have been taken into consideration, in order to illustrate specially the points at variance in both official works. The original Latin titles, as they appear in the Japanese Pharmacopæia, have been retained, followed by the English designation figuring in that work. The data appearing in parentheses refer to the corresponding requirements figuring in the British Pharmacopæia.

ACETANILIDUM.—Acetanilid.—Melting-point 113°-114° (113°).
Soluble in 250 (210) parts of water.

ACETICUM.—Acetic acid.—Specific gravity 1.041,

ACIDUM ACETICUM.—Acetic acid.—Specific gravity 1.041, containing 30 per cent. of pure acetic acid (33 per cent.). ACIDUM ACETICUM DILUTUM.—Diluted acetic acid.—Contains

6 per cent. (5 per cent.) of pure acetic acid.

o per cent. (5 per cent.) or pure acetic acid.

ACIDUM ACETICUM GLACIALE.—Glacial acetic acid.—Specific gravity about 1.056-1.064; congealing-point above 9°. Required to contain not less than 96 per cent. (98.9 per cent.) of hydrogen acetate. Dilute 5 grams of the acid with water to make it measure 50 c.c.; 10 c.c. of the solution should require for neutralisation at least 16 c.c. of per cent. (198.9 per cent.) of hydroxide volumetric solution (indicator). normal potassium hydroxide volumetric solution (indicator: phenolphthalein).

ACIDUM ACETYLSALICYLICUM.—Acetylsalicylic acid.—Dissolve 0.1 gram of the acid in 5 c.c. of alcohol (90 per cent.) and dilute the solution with 20 c.c. of water; the solution should immediately produce no violet colour with 1 drop of ferric

chloride solution.

ACIDUM ARSENICOSUM.—Arsenous acid.—Required to contain not less than 99 per cent. of pure arsenous acid (99.8 per cent.). Dissolve 0.5 gram of the acid together with 3 grams of sodium bicarbonate in boiling water, and dilute the cold solution with water to make it measure 100 c.c.; 10 c.c. of the solution should decolorise at least 10 c.c. of N/10iodine volumetric solution (indicator: starch solution)

ACIDUM BENZOICUM.—Benzoic acid.—M.-p. about 120°. ACIDUM EORICUM.—Beric acid.—Soluble 1 in 25 of alcohol (1 in 30). 50 c.c. of an aqueous solution 1:50, to which hydrochloric acid has been added, should not be immediately coloured blue by the addition of 0.5 c.c. of

immediately coloured blue by the addition of 0.5 c.c. of potassium ferrocyanide solution.

ACIDUM CARBOLICUM.—Carbolic acid.—Congealing-point 39°.41° (39°.40°); b.-p. 178° to 182° (not above 183°).

ACIDUM CARBOLICUM PRO DESINFECTIONE.—Carbolic acid for disinfection.—Long needles, or a crystalline mass, colourless, or almost white, or slightly reddish, having a characteristic odour; soluble in alcohol, ether, chloroform, and in glycerin. Congealing-point above 34°; b.-p. about 177°.

ACIDUM CHRICUM.—Citric acid.—An aqueous solution

(1:10) should produce no more than an opalescence with barium nitrate solution; the same solution, nearly neutralised with solution of ammonia, should remain almost clear on the addition of ammonium oxalate solution. Dissolve 5 grams of the acid in 10 c.c. of water and nearly neutralise it with solution of ammonia; the solution should be not more than faintly coloured by solution of hydrogen sulphide.
Ash limit 0.1 per cent. (0.05 per cent.).
ACIDUM DIETHYLBARBITURICUM.—Diethylbarbituric acid.—
M.-p. 188° to 191° (191°).

ACIDUM HYDROCHLORICUM.—Hydrochloric acid.—Contains per cent. of hydrogen chloride (31.79 per cent.). Sp. gr. 152. 3 c.c. of the acid, diluted with 15 c.c. of water, should hydroxide volumetric solution (indicator methyl orange).

ACIDUM NITRICUM.—Nitric acid.—Contains 25 per cent. of

ACIDUM NITRICUM.—Nitric acid.—Contains 25 per cent. of pure nitric acid (70 per cent.).

ACIDUM OLEINICUM.—Oleic acid.—Sp. gr. about 0.9 (0.890 to 0.910). When cooled to about 4° it becomes semi-solid (below 9°), and on further cooling it congeals to a whitish solid mass. A mixture of equal parts of oleic acid and alcohol (90 per cent.) should form a clear solution without separating any oily drops on its surface. Heat 1 gram of the acid with 20 c.c. of alcohol (90 per cent.), add 2 drops of phenolphthalein solution, and then add concentrated sodium hydroxide solution (1:4) drop by drop to the mixture until it acquires a permanent red colour. Add acetic acid until it acquires a permanent red colour. Add acetic acid to it until the red colour just disappears and filter; 10 c.c. of the clear filtrate should be rendered not more than faintly turbid when mixed with 10 c.c. of ether and 1 c.c. of lead acetate solution.

ACIDUM PHOSPHORICUM.—Phosphoric acid.—Contains 20 per

cent. of pure phosphoric acid.

ACIDUM SALICYLICUM.—Salicylic acid.—M.-p. about 157°. ACIDUM TANNICUM.—Tannic acid.—Dried at 100°, it should ACDUM TANNICUM.—I annic acid.—Dried at 100°, it should lose not more than 12 per cert, of its weight. On incineration, 5 grams of acid should leave not more than 0.01 gram of solid residue. Dissolve the residue in 2 c.c. of acetic acid, dilute the solution with 8 c.c. of water, filter; 5 c.c. of the filtrate should produce no more than a slight turbidity with solution of hydrogen sulphide.

with solution of hydrogen sulphide.

ADEPS LANE ANHYDRICUS.—Anhydrous wool fat.—When dried at 100° it should lose not more than 1 per cent. of its weight. On incineration, it should leave not more than 0.1 per cent. of ash (0.3 per cent.), which should not turn a moistened red litmus paper blue.

ADEPS LANE CUM AQUA.—Hydrous wool fat.—Anhydrous wool fat 75, water 25 (70+30).

ADEPS SUILUS.—Hog's lard.—M.-p. 43° to 51.5°, to a clear liquid, which is colourless in a layer not thicker than 1 cm. Iodine value 46 to 80 (52 to 63); acid value not more than 2 (not more than 1.2). (not more than 1.2).

AGAR-AGAR.—Agar-agar.—The bleached mucilaginous substance of the algæ, Gelidium Amansii, Lam., and other species of gelidium, prepared by freezing and drying. In four-edged sticks of whitish colour, translucent, with a slight lustre, externally crumpled, light, spongy, and tough. When 1 gram of agar-agar is boiled with 100 c.c. of water it dissolves leaving a small quantity of residue and produces. lustre, externally crumpled, light, spongy, and tough. When I gram of agar-agar is boiled with 100 c.c. of water it dissolves, leaving a small quantity of residue, and produces a slightly turbid mucilage, which, on cooling, becomes semitransparent jelly. The mucilage should not turn a blue litmus paper red. 3.c.c. of the mucilage, on the addition of 1 drop of iodine solution, should remain yellow, nor should decolorise it immediately; but the mixture should be coloured deep violet by 0.5 c.c. more of the reagent. When dried at 100° agar-agar should lose not more than 1.5 per cent. of its weight. On incineration agar-agar should leave not more than 4.5 per cent. of solid residue. ALOE.—Aloës.—The inspissated juice, collected from the leaves of various species of aloë, growing in Africa. A solution of aloes in boiling water acquires a greenish fluorescence on the addition of concentrated borax solution. On pouring nitric acid upon fragments of aloes only a slight greenish colour and not a red colour should be produced around them within three minutes. Ash limit: 1.5 per cent.

AMMONIACUM.—Ammoniacum.—When thoroughly extracted with boiling alcohol to leaves a residue which, after drying,

with boiling alcohol it leaves a residue which, after drying, should not exceed 40 per cent. Ash limit: 5 per cent.

(7 per cent.).

AMYLUM.—Starch.—Three varieties of starch are described under this title: (a) Katakuri starch, prepared from the root of Erythronium japonicum, Makino; (b) kudzu starch, prepared from the root of Pueraria hirsuta, Matsum; potato starch.

ARGENTUM COLLOIDALE.—Colloidal silver.—Is required to contain 74 to 80 per cent. of silver. (The Supplement to the French Codex (1922) requires a content of at least 70 per

ATROPINUM SULFURICUM.—Atropine sulphate.—When dried at 100° the salt should lose not more than 2.6 per cent.

(2 per cent.) of its weight. The melting-point of the base, precipitated by solution of ammonia, and not that of the salt, is to be determined, and should be above 115°.

BAISAMUM COPATIVE.—Balsam of copaiba.—Sp. gr. 0.980 to 0.993 (0.975-0.995). Acid value 75.8 to 84.2; saponification

0.993 (0.975-0.995). value 84.2 to 92.6.

BALSAMUM PERUVIANUM.—Balsam of Peru.—Saponification value not less than 224.4. Saponification value for cinnamein not less than 236.5 (235).

Balsamum Tolutanum.—Balsam of tolu.—Acid value 109.4 to 163.3 (107.4 to 147.2). Saponification value 154.3 to 218.8 (170 to 202).

Benzaldehydum.—Benzaldehyde.—Sp. gr. 1.046 to 1.055.

Benzaldehyde.—Sp. gr. 1.046 to 1.055. B.-p. 177° to 179°.

CAFFEINUM.—Caffeine.—Partly volatilises at about 100°, and completely sublimes at 180°. M.-p. 230° to 234° (235°). CALCARIA CHLORATA.—Chlorinated lime.—Should contain not less than 25 per cent. of available chlorine (30 per cent.). CALCIUM LACTICUM.—Calcium lactate.—On drying at 120° it should lose 25 to 29.5 per cent. of its weight. Incinerate 1 gram of the salt, previously dried to constant weight at 120°, and dissolve the residue in 25 c.c. of N/2 hydrochloric acid volumetric solution; the resulting solution should require not more than 7.1 c.c. of N/2 potassium hydroxide volumetric solution for neutralisation of the excess acid.

quire not more than 7.1 c.c. of N/2 potassium hydroxide volumetric solution for neutralisation of the excess acid. (Indicator, methyl orange.)

CAMPHORA DEPURATA.—Purified camphor.—M.-p. 175° to 180° (about 175°). B.-p. 204°. Dissolve 10 grams of purified camphor in absolute alcohol to make the solution measure 50 c.c. at ordinary temperature; optical rotation (a D 20°) of the resulting solution is about +8.8°.

CANTHARIDES.—Cantharides.—The dried beetles. Epicauta Gorhami, Mars. Required to contain at least 0.5 per cent. of cantharidin. Ash limit: 8 per cent.

CAPSULE COPAIVE.—Copaiba capsules.—Each capsule contains 0.5 gram of copaiba.

CAPSULÆ COPAIVÆ.—Copaiba capsules.—Each capsule contains 0.5 gram of copaiba.

CATECHU.—Catechu.—Under the above title both Gambier and Pegu catechu are officially described.

CERA ALBA.—White wax.—Sp. gr. 0.965 to 0.975. M.-p. about 65°. Acid value 4.6 to 7.9 Ester value 80.4 to 93.5.

CERA FLAVA.—Yellow wax.—M.-p. 63° to 67° (61° to 64°).

Sp. gr. 0.962 to 0.972 (0.958 to 0.970). Acid value 4.6 to 8 (16.8 to 22.4); ester value 80.4 to 93.6 (69.6 to 76.3). Add a saturated solution of boric acid to the yellow wax and dry it on the water-bath; it should not be coloured reddishborown. brown.

CHLORALUM HYDRATUM.—Chloral hydrate.—M.-p. 53° to 56° (49° to 53°).

COCAINUM HYDROCHLORICUM. — Cocaine hydrochloride.— When dried at 100° should lose not more than 0.5 per cent.

of its weight (1 per cent.).

CODEINUM PHOSPHORICUM.—Codeine phosphate. dried at 100° should lose not more than 8.5 per cent. of its

weight.

COLOPHONIUM.—Rosin.—Acid value 151.5 to 179.6.
CORTEX CINNAMOMI LOUREIRII.—Nikkei bark. Japanese cinnamon bark.—The dried hark of the trunk and roots of Cinnamomum Loureirii, Nees.

CORTEX RHAMNI PURSHIAN E.—Cascara sagrada.—The clear infusion, obtained by macerating 1 part of cascara sagrada, in coarse powder, with 100 parts of cold water, produces a yellowish-red colour with 2 to 3 drops of solution of ammonia.

ammonia.

Cresolum crudum.—Crude cresol.—Distil 50 c.c. of crude cresol, about 46 c.c. of the distillate should be obtained between 180° and 200°.

DIACETYLMORPHINUM HYDROCHLORICUM.—Diacetylmorphine

DIACTYLMORPHINUM HYDROCHLORICUM.—Diacetylmorphine hydrochloride.—The m.-p. of the base, and not of the salt, is to be determined by dissolving 0.1 gram of the salt in 2 c.c. of water, adding solution of ammonia, washing and drying the white precipitate, which should melt at 169° to 172°.

DIASTASA.—Diastase.—Pour 70 c.c. of boiling distilled water, under frequent stirring, upon a mixture of 5 grams of potato-starch, previously dried at 100° for three hours, and 30 c.c. of water, heat the mixture in a water-bath for thirty minutes, and cool the paste to 55°. Add 0.05 gram of diastase to the paste, and allow the mixture to stand at 55° for one hour with frequent stirring; 10 c.c. of the resulting solution should decolorise 40 c.c. of Felling's solution. When dried at 100° diastase should lose not more than 4 per cent. of its weight. The solution obtained by boiling 0.1 gram of diastase with 20 c.c. of water should, after cooling, produce no bluish-violet colour with iodine after cooling, produce no bluish-violet colour with iodine solution.

EMETINUM HYDROCHLORICUM.—Emetine hydrochloride.—A white or almost white crystalline powder, without odour and having a bitter taste: readily soluble in water and in alcohol, showing a neutral reaction; on exposure to light it gradually becomes coloured. The solution obtained by freshly dissolving 0.005 gram of ammonium molybdate in 1 c.c. of sulphurie acid, when added to emetine hydro-

chloride, produces a green colour, changing to a deep green on the addition of hydrochloric acid. Its aqueous solution, acidified with nitric acid, produces a white precipitate with silver nitrate solution. It should dissolve almost colour-lessly in sulphuric or nitric acid. Add sodium carbonate solution (1:4) to an aqueous solution (1:130) of the salt to alkaline reaction, shake the mixture with ether, and evaporate the ethereal solution; the residue, when washed with water and dried, should melt at about 68°. When dried at 100° it should lose not more than 15 per cent. of its weight. On incineration it should leave not more than 0.1 per cent. On incineration it should leave not more than 0.1 per cent. of solid residue.

FERRUM REDUCTUM.—Reduced iron.—Required to contain not less than 90 per cent. of pure iron (80 per cent.). Shake 2 grams of reduced iron with 10 c.c. of water; the liquid should not affect the colour of litmus papers, and the filtrate should leave, when evaporated to dryness, not more than 0.003 gram of solid residue.

U.000 gram of solid residue.

Ferrum Sulfuricum Silcum.—Exsicated ferrous sulphate.—
FesO₄+H₂O. Allow ferrous sulphate to effloresce at a temperature of 30° between filter paper for two days, and then dry it in a porcelain dish on a water-bath, until the product loses 35 to 36 per cent, of its weight. Required to contain not less than 30 per cent, of pure iron.

Flores cine.—Santonica.—The dried, unexpanded flowerheads of Artemisia Cina, Berg. The following method of assay is described:

Flores CINE.—Santonica.—The dried, unexpanded flower-heads of Artemisia Cina, Berg. The following method of assay is described:

Transfer 15 grams of santonica, in fine powder and dried at 100°, into a Soxhlet apparatus, extract it with ether for two hours, and then distil off the ether from the extract; boil the residue with 100 c.c. of water and 3 grams of barium hydroxide for 20 minutes, saturate the mixture with carbon dioxide, and then filter after boiling. Concentrate the filtrate to about 10 c.c. by evaporation, then add 10 c.c. of diluted nydrochloric acid, warm the resulting turbid liquid at about 70° to 80° until it becomes almost clear, and then allow it to cool. Shake it at first with 20 c.c. and then twice with 10 c.c. each of chloroform, unite the chloroform solutions together, and distil off the chloroform. Boil the residue for 10 minutes, under a reflux condenser, with 50 c.c. of a mixture of 1 part of alcohol and 8 parts of water, filter the warm liquid through a small filter paper into a small tared flask, and then wash the filter paper with 10 c.c. of a boiling mixture of 1 part of alcohol and 8 parts of water. Allow the combined filtrate to deposit crystals for 24 hours, and filter the supernatant liquid through a filter paper, previously dried at 100°, and weighed. Put the filter paper, previously dried at 100°, and weighed. Put the filter paper in the abovementioned flask, and dry at 100°; the crystals should weigh at least 0.2 gram.

at 100°, and weighed. Put the filter paper in the abovementioned flask, and dry at 100°; the crystals should weigh at least 0.2 gram.

Folia digitalis.—Digitalis leaves.—The Japanese Pharmacopœia is the first work to require a physiological standard of activity for digitalis, as follows:

Extract 1 gram of digitalis leaves, in fine powder, with 10 c.c. of absolute alcohol under a reflux condenser on a water-bath for 15 minutes, and filter after cooling. Again extract the residue with 10 c.c. of absolute alcohol as before, and filter. Remove the alcohol from the combined filtrate by evaporation, dissolve the residue in warm water, then filter the solution through purified cotton, and wash it with water to make the filtrate measure 10 c.c.; the resulting turbid liquid should possess 4 to 6 units, when assayed according to Focke's method, using Rana nigromaculata, Hall, as test animal.

For preservation, digitalis leaves are to be dried over quicklime, or by heat not exceeding 90°; the powder is to be filled in small bottles after being dried as described. The leaves and the powder are to be protected from light and moisture, and not kept more than a year.

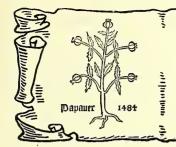
Folia menthe.—Peppermint leaves.—The dried leaves of Mentha arvensis, L., var. vulgaris, Benth.

Folia pruni macrophylla, S. et Z. These are used in the preparation of bakuchi water (aqua pruni macrophyllæ), which may be used as a substitute for apricot water (aqua pruni armeniacæ), both of which are required to contain 0.1 per cent. of hydrogen cyanide.

Formalinum.—Solution of formaldehyde; formaline.—Required to contain about 35 per cent. of pure formaldehyde,

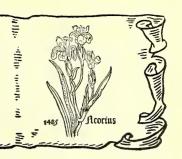
FORMALINUM.—Solution of formaldehyde; formaline.—Required to contain about 35 per cent. of pure formaldehyde, to be determined by the following method: Add to 3 c.c. of formaline 50 c.c. of sodium sulphite solution, obtained by freshly dissolving 25 grams of the crystallised salt in water to make the solution measure 100 c.c., and 1 drop of phenolphthalein solution, and titrate it with normal hydrochloric acid volumetric solution. Then add to 12 c.c. of the sodium sulphite solution 80 c.c. of water and 1 drop of phenolphthalein solution, and titrate it with normal hydrochloric acid volumetric solution. The quantity of the volumetric solution, ohtained by subtracting the quantity required in the latter case from that required in the former case, should be at least 37.8 c.c.

(To be continued.) FORMALINUM.—Solution of formaldehyde; formaline.-



The Sponge Trade in 1922

An Interview with Mr. Ernest Cresswell



FEELING sure that a talk with Mr. Ernest Cresswell about sponges would yield some good "copy," I called the sponges would yield some good "copy," I called the other day at the warehouses of International Sponge Importers, Ltd., Cresswell Brothers' branch in Red Lion Square, where I found Mr. Cresswell as enthusiastic as ever on this subject. "Well, Mr. Cresswell," I said, "our readers have not had your views as to the position of the sponge trade for some time now. I remember the articles The Chemist and Daugier its course at the beginning of the Great War and during its course at the beginning of the Great War and during its course, but what I think would be of interest now is the present position, and also the future prospects of the trade."
"The present position," replied Mr. Cresswell, "is that
the trade has resumed its normal course and supplies



MR. ERNEST CRESSWELL

are regular, if not plentiful. The time has fortunately passed when we could not be sure that the fishing boats while at work—or a steamer with a cargo of sponges—would not be sunk by a German submarine. 'Sponges,' as you may know, are growing all the time, and the beds are visited regularly by the sponge fishermen, the most systematic and up-to-date of whom use the scaphander, or diving apparatus. Nature in some measure protects the crops, because sponges can only be fished in fair weather, while they are growing steadily under the surface of the sea. Then the little sponges of two or surface of the sea. Then the name sponges of two or three years ago are big enough in the fourth year to repay fishing, while the larger ones which have been missed before—for they grow sparsely—are there to add to the value of the well-earned haul."

"How is it, Mr. Cresswell, that quite a number of new firms of foreign origin are springing up in London if there is nothing abnormal?"

there is nothing abnormal?

"That has always been a characteristic of the sponge business, and I suppose it will always be so. If the

London Directory for the past twenty-five years were studied it would be found to contain a remarkable record of sudden appearances and disappearances under the heading of 'Sponge Importers and Sponge Merchants.' reasons are obvious: a large capital and much experience are both necessary for success. And some of these new concerns set themselves in opposition to what is, after concerns set themselves in opposition to what is, after all, the largest group of amalgamated firms in the world engaged in the sponge trade. I may point out that the chief firms comprised in International Sponge Importers, Ltd., are Henry Marks & Sons, established a century-and-a-quarter ago; I. & M. Cohen, a century ago; and Cresswell Brothers, three-quarters of a century ago. The amalgamation was formed in 1903. Our figures are available, being public, and it will readily be seen are available, being public, and it will readily be seen from the unusual length of experience we have, with the enormous stocks we keep and the varied assortments we offer, that we are in a position to meet all competition.

"The claim made by individual firms that they have agents on the fisheries presents no new feature, the firms comprised in our company having had agents on the fisheries for generations, and our company has for very many years had its own freehold property as a depôt at Ægina (Greece), which island is situated most favourably

among the centres of the Mediterranean sponge trade."
"Why is your company sometimes referred to as a combine?"

"When such a term is applied to our company, it is not only untrue, but intended to prejudice the hearer against our company and endeavour to create the impression that our object in amalgamating was to form a monopoly, to the detriment of traders and retailers. The sole aim of the amalgamation was to do away with the violent fluctuations in prices applying to the industry at the fisheries, which were detrimental to all interests. As a matter of fact, prior to the amalgamation there was keen competition for the purchase of sponges between the various English firms on the Mediterranean markets, so much so that prices at the source were driven up beyond their according value and the cituation grow interests. their economic value, and the situation grew intolerable.'

"What effect, then, has your amalgamation had on the

sponge trade?"
"After my company's formation the trade in general felt the benefit of our amalgamation, thus refuting all malevolent statements. My company has been the means of introducing improvements and benefits to the trade by attracting to this country a considerable business which formerly was carried on in foreign countries. The truth of what I have said is borne out by the fact that the dividend paid on our preference shares is 6 per cent., and on our ordinary shares usually 5 per cent. Once only was it 6 per cent. on the latter. For an industrial company these dividends are very low, and prove that

we sell at the lowest possible rate of profit.
"The sponge trade is one in which large stocks must be held, for sponges are used for such an infinite variety of purposes that there is frequently a run on a certain kind, quality, or size, and the want cannot be supplied from one or more shipments. That is one way in which the trade benefits from a company consisting of amalgamated firms, who by drawing upon each other's reserve stocks can quickly and satisfactorily supply the needs of buyers. Otherwise my company conducts its business similarly to the Imperial Tobacco Co., Ltd., and others. who operate by means of branches, each retaining its old firm's premises, staff (including travellers), and the many elements that go to constitute a large modern house of business.

"The directors of my company are still the same original partners in the various firms, and to their number has been added an infusion of young blood from the parental and directorial stock. All of them remain active members, as in the old days, giving as much of their time to the company's business as in the days of yore. The greater number of the directors have been frequent visitors to the fishing centres, staying there for long periods. They have also travelled all over the Continent, and have visited the various branches taken over by the company in Paris, Brussels, and other cities, to say nothing of visits to the U.S.A., and my own visit to Australia.

"Now," said Mr. Cresswell, "in support of my assertions I will take you round the warehouses, where you will find the largest stock of sponges in the world housed under one roof." In the Mediterranean case-goods department I saw a splendid selection of chemists' and drug-gists' unbleached sponges for bath, toilet, and surgical use, all uniform in size, in their original cases as imported from the fisheries. These are largely in demand by export buyers, and at prices to suit all purses, e.g., extrachoice quality Mandrouka for toilet purposes run from 1s. to 4s. each, and bath-sponges at from 5s. to 25s. each, with "best second" quality toilet ranging from 4d. to 3s., and bath-sponges from 4s. to 10s. The contents of these original cases vary from 12 up to 300 pieces, as to size and quality, and wherever the foreign or Colonial parcelpost is in operation these sponges can be packed under pressure and sent to any part of the world without incurring expense of packages to the buyer, while the quality and texture of the sponges is unimpaired by the press-packing, as the buyer can restore them to their original condition by domining. The changest those their original condition by damping. The chemist, therefore, gets a varied assortment of sponges in the cheapest possible manner, and as the work is done by experts expossible manner, and as the work is done by experts excellent value for money is assured. On the floor devoted to fine Turkey cup-sponges, which are not so plentiful as they were, I saw a fine collection in original cases all graded as to size and price, from 200 pieces at 1s. each down to 20 pieces at 10s. each. The carding of toilet- and nursery-sponges for display is a feature of the Cresswell branch. This section is a steadily increasing one increasing one.

The bleaching and drying of sponges is an important section of the Red Lion Square business, and the steam bleachery is the largest in Europe. Operations were in full swing at the time of my visit. In The Chemist and Druggist of May 27 (p. 67) was given a short review of Mr. Ernest Cresswell's admirable little book on sponges, in which he has managed to compress many interesting details in a lucid manner with a wealth of illustration. As showing the enterprise of the firm and their ramifications in those parts of the globe where sponges are to be fished, we find that on one occasion they equipped an expedition of Greek divers and fishermen to Belize, British Honduras, at the request of the late Mr. J. Chamberlain, then Colonial Minister, who arranged the details at a personal interview. They thoroughly investigated the coasts of the colony and the adjacent waters. This expedition worked for nearly two years, and went as far as Yucatan and Cozumel Island. After charting cut the waters and packing up the large quantity of sponges accumulated, the expedition returned to Greece via New York. It was under the direction of Mr. George Brown, a cousin of Messrs. Cresswell, a resident at Ægina, Greece, who has lived there as their agent for so long a time that he has become as Greek as any of the Greeks themselves. He is the only Englishman resident on the island. I was assured that the popularity of the loofah as a bath and toilet article is well maintained, and it may be emphasised that the company were the first to bring this interesting product before the public many years ago, and with such success that they are the world's headquarters for loofahs. I was shown a number of interesting photographs dealing with the cultivation and preparation of loofals in Japan, which country is the only one where the cultivation has been taken up seriously and successfully.

Association Affairs

Aberdeenshire.—At a largely attended meeting in the Palace Hotel, Aberdeen, recently, Mr. J. Rutherford Hill, Edinburgh, and Dr. J. F. Tocher, Aberdeen, commended a proposal for the amalgamation of the chemists' organisations in East and West Aberdeenshire for their mutual protection. It was proposed that the name of the new organisation be the Aberdeenshire Pharmacists' Association, and the following were appointed office-bearers: President, Mr. R. Alexander, Strichen; Vice-President, Mr. J. D. Christie, Oldmeldrum; Executive Committee, Messrs. R. Alexander, J. D. Christie, W. W. Hunter; A. S. Weir, Kemnay; and J. R. Reith, Cults; Secretary, Mr. J. R. Reith.

Edinburgh.— The Edinburgh Chemists', Assistants', and Apprentices' Association held a botanical excursion recently, when a large company, under the leadership of Mr. Andrew Howison, B.Sc., travelled to Longniddry, and, under ideal weather conditions, spent a busy evening in field work along the coast of the Firth of Forth at Pert Seton. Mr. Howison pointed out and explained the special adaptation of the maritime plants to their environment, and illustrated the building up of sand dunes, which abound at the place visited. Among the many plants collected and described were Caltha palustris, Papaver rhews, Fumaria officinalis, Radicula nasturtium, Sisymbrium officinale, Silene inflata, Hypericum perforatum, Ononis repens, Lotus corniculatus, Spiræa ulmaria, Rubus fruticosus, Rosa canina, Cratægus oxyacantha, Cherophyllum sylvestre, Enanthe crocata, Galium verum, Centaurea nigra, Fraxinus elatior, Cynoyglossum officinale, Solanum dulcamara.

Sheffield.—The annual general meeting of the Sheffield Pharmaceutical and Chemical Society was held on June 19 at the Church House, Mr. A. Knowles presiding. The secretary presented the annual report, which was of a satisfactory nature. The membership is larger than for some years past. The treasurer presented the balance sheet, which, after showing heavy administrative expenses, left a balance in hand of £16 8s. 7d., against £5 2s. 10d.; he thought the hon. secretary had earned the thanks of the Society for such a successful year's working. The winners in the General Knowledge Competition were (1) Mr. J. M. Drabbe, (2) Miss Ramsell, (3) Miss Graham.

Insurance Act Dispensing

A Record of matters concerning Chemists' interests in the National Health Insurance Acts

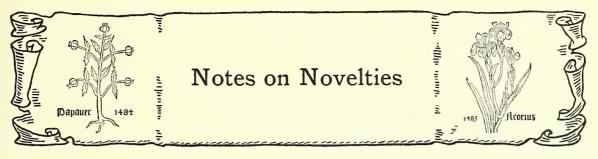
Reports from Local Centres

ENGLAND AND WALES

Blackburn.—At a meeting of the Insurance Committee, on June 14, a letter signed by twenty-seven chemists on the panel was read by the clerk, protesting against the terms of service. The statement for 1921 showed that 158,523 prescriptions were dispensed, at a cost of £6,160 18s. 10d. The price of drugs was £2,551 13s. 4d., and the dispensing-fees, £3,509 5s. 6d.; the average cost per prescription was 3.86d.; the average dispensing-fee per prescription, 5.64d. The number of urgent prescriptions issued during the year was 239.

Bolton.—The Pharmaceutical Committee suggested to the Insurance Committee recently that the duplicate prescription form should be retained, to which the Insurance Committee has agreed.

West Ham.—At a meeting of the Insurance Committee, on June 12, Mr. Razor, in moving the adoption of the report of the Pharmaceutical Service Sub-Committee, said that there were several complaints concerning chemists on the southern side of the borough. It was also reported that the West Ham branch of the Retail Pharmacists' Union had protested against the reduction of the dispensing-fee.



SCHWEITZER'S COCOATINA

The novelty about Schweitzer's Cocoatina is that this well-known business is now carried on by the Schweitzer Cocoatina Co. Ltd., and that the sole agents both for the home and export trade are Fletcher, Fletcher & Co., Ltd., Vibrona Laboratories, Holloway, London, N. 7. Cocoatina is now only sold in two sizes, retailing at the fixed prices of 1s. 6d. and 4s. Particulars are given in Messrs. Fletcher's inset.

GREENWICH SWEETENED LEMONADE

A new package has been adopted for the Greenwich Sweetened Lemonade, which is put up in tins decorated in blue. In accordance with the practice which has been adopted since the genesis of lemonade crystals, pure tartaric acid is employed in the manufacture. This product being ready-sweetened is convenient to use, as it is only necessary to add a teaspoonful to a tumbler of water to produce a refreshing, acidulated beverage.

CELLOPHANE

Although not now a novelty, Cellophane, the transparent wrapping made by the Cellophane Co., 7, 8, and 9 Bird Street, London, W. 1, is increasingly being used in the drug and allied trades as a packing material. A sample of Cellophane is inserted in this issue as an inset so that our subscribers may judge of the beauty of the material. A number of sheets of different colours and textures have also been submitted to us which show that all users can be satisfied with a kind best suited for the purpose in view.

CONCENTRATED LIQUORS

H. E. Stevens & Co., manufacturing chemists, 122 Great Suffolk Street, London, S.E. 1, issue a special list of concentrated extracts, "4 Medals brand," for production of liquid extracts, tinctures, and infusions, and also concentrated liquors for syrups. The advantages of these liquids are obvious, especially to exporters, as the small bulk and absence of costly spirit. There are fiscal duties on spirit in most countries which ordinarily involves the locking-up of a large amount of capital. When the preparation is kept in concentrated form the diluent can be added as desired. The resulting products, where official, are guaranteed to conform to the B.P. standards.

THE INSETS IN THIS ISSUE

It will be noticed that this Number contains many advertisements in the form of insets. This method, criginated by the C. & D. many years ago, was rendered possible by the fact that, owing to the large bulk of the Special Number, other means of transmission than newspaper post have to be arranged. On this account we are able to include insets specially printed according to the requirements of the advertisers. The insets, in consequence, are especially attractive. The following is the list of insets included in this Number:

Beck & Inchbold, Ltd.
Bronnley, H., & Co., Ltd.
Butler & Tanner.
Cellophane Co.
Chlorophyll and Chem.
Corp.
Denoual, Jules, & Co.
Drane, R., Ltd.
Eucryl, Ltd.
Fletcher, Fletcher & Co.,
Ltd.

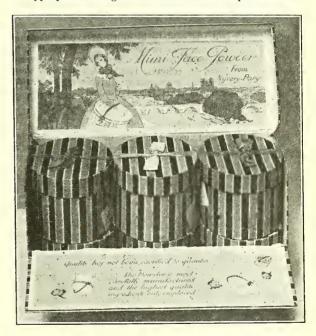
Ferber, Robt., Ltd.
Ford. Shapland & Co.
"Koh i-noor" Tooth
Brushes
Maison Porges (Paris).
Mawson & Proctor, Ltd.
Richardson, J., & Co.
(Leicester), Ltd.
Rudduck & Co.
Stevenson & Howell, Ltd.
Waide, Thos., & Sons, Ltd.

COAL-TAR SOAP LIST

Wright, Layman & Umney, Ltd., 46 Southwark Street, London, S.E., have prepared a new price list for Wright's coal-tar soap and coal-tar specialities. The wholesale and retail prices are given with illustrations in colour of the various articles dealt with in the list.

POWDERS AND PUFFS

A common sight in Paris is the midinette carrying a round box containing one of the latest "creations." A replica of this box has been employed by Nissery & Co., for whom the agents in this country are Thomas Christy & Co., as a container for face-powder. The other contents of the box are a tube of perfume and a small lemon-shaped tablet of soap. Messrs. Christy are advertising in this issue Dorothy Dainty powder puffs, an attractive line, with an appropriate designation. The outfit comprises a silk



bag, a block of powder, and a small puff. The bags are made in several colours, each lined with a contrasting shade. A handsome gilt basket-work stand is offered in connection with certain-sized orders. Before purchasing "pure badger" shaving-brushes pharmacists should inspect those offered by this firm. They are of British make throughout, and a "shaving service" is guaranteed the user for one year.

Maw's "Meritor" Brushware.

We have had an opportunity of inspecting the branded brushware of S. Maw, Son & Sons, Ltd., 7-12 Aldersgate Street, London, E.C. 1, for which ware the word "Meritor" has been registered. In pursuance of their policy of supplying their branded products to pharmacists only, Messrs. Maw have organised for the "Meritor" series a very complete range of

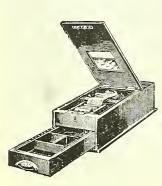
brushes to supply every need of the toilet. Each brush is cartoned, and all are of the high quality long associated with the house of Maw. This, however, is not the whole story: what is especially noteworthy is the attractiveness of the showcards, posters, and other advertising matter accompanying what we may call the outfits. Alternative parcels are offered, comprising a preponderance of quick-



selling lines; and the variety in unity of the advertising matériel should make window-dressing a pleasure even to the chemists who most loathe it. The three-fold screen, beautifully printed in colours, is almost a window-show in itself, and the counter cartons will give a welcome note of distinction to many a stretch of "sameish" goods. A printed guarantee accompanies each brush.

COUNTER ADJUNCTS

One of the most useful means of checking counter transactions and obtaining an analysis of turnover is by



means of cash registers. A range of some fifteen of these instruments, made by J. C. King, Ltd., was recently shown to a C. d. D. representative. Some are built of solid mahogany, others satinwood or walnut, with a mahogany-polish finish. They are also obtainable in oak. All are well made. The are well made.
"Essex," which is advertised in this issue, is fitted with bell control

is fitted with bell control and check action, the metal parts being made of brass. Another useful line offered by Messrs. King is duplicate books. These may be obtained either plain or ruled, each book containing 100 perforated and 100 fast leaves. The binding is of paper and well wired. Two sizes are available—8 in. × $4\frac{1}{2}$ in. and 10 in. × $7\frac{1}{2}$ in. A sample book will be sent on amplication A sample book will be sent on application.

REDUCED PRICES of dispensing bottles are given in the advertisement of Edward Taylor & Co., 50 and 52 Hanover Street, Liverpool.

FOR THE REGISTRATION of trade-marks and obtaining patents in Bulgaria Dr. Marco C. Marcoff, advocat, Sofia, offers his services.

OLD DRURY WET WHITE.—This liquid white, much used in the theatrical world, is made by Amos Jones, 18 Grape Street, London, W.C. 2.

George Owen & Sons, Florence Street, Holloway Head, Birmingham, specialise in transparent envelopes for packing shampoo powders, etc.

G. F. Sutton, Sons & Co., Osborne Works, Brandon Road, King's Cross, London, N. 7, invite applications for terms of sale of Sutton's cloudy ammonia.

SPONGE SHOW-CABINET.—A good idea in show-cases for sponges is shown in the advertisement of I. S. H. Benjamin, sponge importer, 12 York Street, Glasgow.

NEW LINES IN TOILET preparations reserved for chemists' trade are figured in the advertisement of P. H. Galloway, Ltd., 154-162 Walworth Road, London, S.E. 17.

LORIMER-MARSHALL, LTD., manufacturing chemists and perfumers, 12 Tower Hill, London, E.C. 3, invite applications for their new illustrated list, which will be ready early in July.

PEPPERMINT oil.—Seymour's Distillery and Farm, Holbeach, offer to give £1,000 to charity if it can be proved that any adulterant or foreign oil is added to the firm's peppermint oil.

THE GENERAL SURGICAL Co., LTD., 141 and 149 Farring-don Road, London, E.C. 1, invite inquiries from the wholesale and export trade for any glass work and all kinds of surgical instruments.

ARMOUR & Co., LTD., Queen's House, Kingsway, London, W.C. 2, have issued a new price-list of organo-therapeutic preparations, and will send a copy to any chemist who applies by postcard.

RANDALL & WILSON, LTD., wholesale druggists, 146 High Street, Southampton, give the details of the arrangement entered into with the Society of Apothecaries for the acquisition of the Society's process book, to which reference was made in the C. & D., June 3, p. 52.

STOCKTAKING CLOSING.—Allen & Hanburys, Ltd., inform us that their premises at Bethnal Green, London, E. 2, will be closed from June 29 to July 1 inclusive for the purpose of stocktaking. During that time small urgent orders can be executed at Plough Court, Lombard Street, E.C. 3, or 7 Vere Street, W. 1.

Births

Bostock.—At 20 Darwin Street, Northwich, on June 16, the wife of Sydney M. Bostock, chemist and druggist, of a daughter.

CROOKS.—At 6 Spencer Road, Londonderry, on May 31, the wife of T. A. Crooks, Ph.C., of a daughter.

MANLEY.—At the Medical Hall, Ballybay, on June 9, the wife of H. J. Manley, M.P.S.I., of a son.

Information Department INFORMATION WANTED

Postal or telephone information with respect to makers or first-hand suppliers of the undermentioned articles will be appreciated: H/156. Nervax headache pow-ders

M/166. Areodal P/176. Barclay's Royal Olive Soap paraffin M/176.

spray M/176. "Lubrosenthrol" solu

S/126. Parfum Bul-Bul B/176. Quinida W/146. Whitehead's In Quinida Whitehead's nursery

INFORMATION SUPPLIED

Inquiries regarding the following articles have been answered. The information as to supply will be given to others who send a stamped, addressed envelope to the Information Department, The CHEMIST AND DRUGGIST 42 Cannon Street, London, E.C. 4.

"Areca" brand toilet goods, M/176
Calol liquid petroleum product, A/66
Cutnot corn extractor, B/166
"Euchrisma" toilet preparations, B/156
"Euchrisma" toilet preparations, B/156

Calon Indus personal A/66
Cutant corn extractor, B/166
"Euchrisma" toilet preparations, B/156

Austria's New Pharmacopæia.—In view of the proposed new Pharmacopæia for Austria, it has been suggested that Austria and Germany should possess a common standard work, or, failing this, that the same principles should be followed in both countries in compiling the individual pharmacopeias. The existing Austrian Pharmacopæia is in Latin, and it is now suggested that the new Austrian Pharmacopæia should be published in German.

Observations and Reflections

By Xrayser II.

The Fine-chemical Industry

is undoubtedly necessary to our national welfare, and possibly to our national safety, but it does not follow that the Safeguarding of Industries Act is a good Act, or that they who dislike it are selfish and unpatriotic. I do not remember that in the cases that came before the Referee anybody suggested that this industry should not be protected; the objection to the Act—or rather, to the Schedule to the Act—was that some of the most important "chemicals" protected are not "fine," and that their protection rather injures than helps the chemical industry of the country in general. Sir J. J. Thomson, O.M., F.R.S., whose opinion is at least as valuable as that of your correspondent, Mr. G. J. Alderton, goes further than this. He says the Act has increased the difficulties of research in this country and caused a deterioration of quality in the materials required. In this opinion he has had support from other scientists, and Mr. Baldwin's sneering retort on his "general attitude on this matter" was a piece of impertinence. Mr. Baldwin is said to have since threatened to resign if he could not have his own way with regard to the inclusion of certain articles in the Schedule, and to have been allowed to have it solely to avoid a crisis in the Government. These are hardly the grounds on which such delicate matters as chemical industry can safely be interfered with.

Mr. Cecil Owen

in his pleasantly written article on Dovedale (which of itself should attract many visitors to the Conference at Nottingham), does well to give prominence to the much-neglected poet, Charles Cotton, who survives now almost entirely by his connection with Izaak Walton and his translation of Montaigne, which, although it has not quite the charm of Florio's version, is a very fine achievement. Cotton has no place in Palgrave's "Golden Treasury" or Ward's "English Poets," or (stranger still) in Mr. Massingham's anthology of seventeenth-century verse. One short piece of his appears in "The Oxford Book of English Verse," and the greater part of his "Contentation" (inscribed to Walton) is included in Trench's "Household Book of English Poetry." I am glad, however, to see announced a volume of selections from his verse which ought to revive his name. The specimens Mr. Owen gives, especially the opening verses of the second, which are singularly like Mr. W. A. Davies in the best of his nature-poetry, are proof enough of his quality. Wordsworth in one of his prefaces speaks very highly of Cotton, and Coleridge says his poems "are replete with every excellence of thought, image, or passion which we expect or desire in the poetry of the milder Muse." Cotton was born and lived at Beresford Hall, a few miles above Mill Dale, over the Staffordshire border. "Cloud," by the way, in the place-name Thorpe Cloud is an interesting local survival, which occurs again in Stanton Clouds, about six miles from Nottingham. It means a hill or mass of rock, and is from the same root as "clod," the original sense of which is an agglutinated mass. I note that St. Bertram is not on Mr. Owen's list of acquaintances; neither is he on mine. There was a St. Bertram, Bishop of Mans (died July 3, 623), but how came he to be buried at Ilam?

Dovedale

is, of course, not the only place near Nottingham that visitors with time on their hands would do well to have a peep at. Southwell is one in which an afternoon or more might be spent delightfully. It is charmingly situated, easily got at, its cathedral, though small, is one of the most interesting in England, and has some wonderful old wood-carving, and there is an inn that claims an immemorial antiquity, in a room of which Charles I. is said to have been handed over to the Parliament by the Scottish Commissioners. What is, perhaps, of more importance, they know how to cater for visitors there—or did so when I was last there. Then there are

Edwinstowe and the Dukery country behind it. But one little spot, nearer still, and not, I fancy, often visited, is Dale Abbey, in a hollow of the hills behind Stanton. It used to be a delightful cycle ride through Sandiacre and along a woodland track beyond it to this place, but motors have made havoc of all that till one gets out of the main roads. From Sandiacre station, however, the cycle may still be used, though the hill is steep and awkward. Dale itself is nevertheless sufficient reward for all. Quite out of the world, it has the quaintest of churches (formerly, they say, part of the inn's premises, between which and itself there was a connecting door for the convenience of the ringers), and the ruins of the Abbey are picturesque in their setting of green hills and quiet pastures. It is within easy walking distance of Sandiacre, which is itself about six miles from Nottingham.

Habitual Drunkenness

is about the worst fault a doctor can have, and I was surprised at the leniency shown by the General Medical Council in the cases reported in the C. & D., May 29. Only one of the four men convicted of this fault was struck off the Register, and he was at the time undergoing imprisonment for manslaughter committed while under the influence of drink. All the others had been several times convicted in a police court, two of them for driving a motor-car when drunk, and one of them had previously been taken off the Register and restored upon amendment. The contrast between the leniency shown in such cases as these and the prompt punishment that follows such comparatively trivial offences as advertising and such-like "unprofessional" conduct is rather striking. The Council can hardly realise the extent to which the graver fault yet prevails, especially in country places, and the evils it causes. Things are not, indeed, as bad as they used to be in this respect, and a country doctor's life is sufficiently hard to afford some palliation for an occasional lapse, but nothing can excuse habitual over-indulgence, and it ought to be treated as an absolute bar to practice. I have very little belief in promises of amendment when the habit has become fixed.

Fatal Errors,

says Mr. H. C. Meyrick, are becoming much more frequent. If, as the context seems to imply, he means in the dispensing of pharmacists, or even in the simple sale of drugs by pharmacists, I venture to question the assertion. I have, indeed, only a general impression to go upon (has Mr. Meyrick anything more?), but my impression comes from a pretty careful reading of our trade journals for many years past. We do a great deal more dispensing now than we did, say, twenty years ago, but I doubt whether more fatal errors are recorded against us now, and I am convinced that the proportion of such errors to the amount of work done is less. question, too, whether speed in dispensing increases the liability to error. No doubt there is a limit beyond which it may do so, but I have never, or very rarely, known it to be reached. My experience is that mistakes happen more frequently at a slack than at a busy time. most frequent causes of error are inattention and interruption; the former, certainly, and I think the latter, too, the half-employed man is more liable to than the fully-employed. Mistakes also occur from a species of cerebral affection, not properly to be classed as inattention, against which there is, I fear, no absolute safeguard—a sort of obsession by an idea which inhibits the one required by the occasion. I have known men, ordinarily accurate beyond the common, under such influence substitute for the ingredient ordered another totally unlike it—as, for instance, croton oil for creosote. Such cases are rare, and are, no doubt, pathological in origin, but they do occur, and I do not see how they or the other kinds of mistake referred to would be avoided by the proposed colouring of poisons practicable.

PHARMACIST-MAJOR CORDIER, of the Rhine Army, has been appointed Professor of Natural History, Chemistry, and Toxicology at the Colonial Military Sanitary Service School.

"SANITAS" **EMBROCATION**

SHOULD BE STOCKED BY ALL CHEMISTS.

n announcement of particular interest to you appears this issue on page 73

M. NAEF & Cie

(Late CHUIT, NAEF & Cie)

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Cyclosia Jasminia A

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Established 1792.

Editorial Articles

This Number

ONE of our many admirers was good enough recently to refer to the C. & D. as amaranthine. The compliment was much appreciated—yet we claim to go further than being fade-less, in that we ever endeavour to progress. Recently we were looking over a collection of C. & D. special numbers extending over twenty-five years, and these brought back to mind the various phases and moods of the times. Some future pharmaceutical historian will find plenty of material for research in those special numbers, but what struck us most was the variations in the cover designs. It is much longer than twenty-five years ago since the C. & D. specials were adorned with covers printed in colours. There were endeavours to express the seasonal influence—there was snow about in the Winter Number, and sunshine in the Summer Issue-and the various artists gave rein to their ideas in design and colour blending. Some of the covers stand out among the series as distinctive and specially suitable for the chief drug-trade organ of English-speaking countries. In recent years there were on the covers particularly fine groups of ancient pharmacy pots and mortars, and last year there was the conception of the alchemist as the exponent in the Middle Ages of the art of pharmacy—an art from which modern chemistry has developed within the past century. This year the artist has chosen for his subject an old English garden, with its attractive suggestion of peace and quietness which we all long for after years of stress and strain. The rules of perspective have allowed the introduction of distinctive medicinal plants on a sufficient scale to be recognised, digitalis, poppy, belladonna, and lavender being among others. The design is particularly fitted

for this issue, as the main theme dealt with is the part played by herbals and herbalists in preparing the way for modern botany and present-day drug cultivation. The illustrations of the title-pages of the chief herbals and examples of plant portrayal and the sketches of herbalists form a notable collection which has taken some months to bring together. It will probably surprise most people to find that hundreds of years ago such a high level had been reached in plant illustration. The addition of a selection of views on English and Scottish drug farms will, we think, be recognised as apposite, and be taken, as we intend it to be, as a tribute to the enterprise of our modern herb-growers. Nottingham and its attractions figure largely in this number by reason of the fact that in a month's time the British Pharmaceutical Conference takes place in that thriving and striving Midland city. The Conference, with its two-fold functions-scientific and social-is always well worth visiting. Members can more readily make up their minds to go after a perusal of the account of Nottingham, and the article will make them acquainted with the features and pharmacies of the local chemists, so that they will seem old friends. We begin elsewhere in this issue a comparative review of the new Japanese Pharmacopæia, of which we have received the first copy to reach this country. The importance of this newest pharmacopæia to scientific and commercial pharmacy is considerable, and hence we have deemed it advisable to point out all the outstanding features embodied in the work. The section "The Progress of Pharmacy" is an attempt to maintain our reputation for covering the whole field of pharmacy and its allied sciences. In the stress of war and post-war legislation a severe strain was imposed upon our space, which resulted in the partial suspension of some features of the C. & D. Now we have gathered up the threads again, and we hope to print the resuscitated section at regular intervals. "Our Town Traveller" this time rather belies his title, as the descriptions of business houses concern developments at Liverpool, Manchester, Leeds, and elsewhere. advantage of these descriptions, by our own staff, is that they are unbiased and free from exaggeration, and so convey a true impression of what was seen at the time of the visits. There are many other matters we should like to refer to, but it is unnecessary to continue the catalogue of the features of this issue, as we assume that our subscribers will study the contents from cover to cover. They will find themselves amply repaid for the time spent, in the ideas gathered from the literary articles and the advertisements. We think we have again established a record in drug-trade literature and that our reputation is not only amaranthine, but has been somewhat enhanced.

The Rally in Turpentine

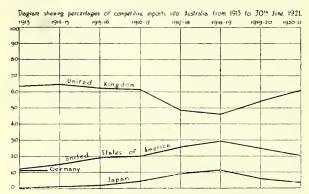
Conditions in the market for American oil of turpentine have been unusually interesting of late, the outstanding fact being a rapid advance of over 16s. per cwt. in the London spot price last week. Prior to this there had been a series of adverse movements for some weeks past, and altogether the market outlook has been obscure, partly as the result of temporary slackness of trade demand in this country, which once more tempted "bearing" tactics by dealers. But the general outlook now appears to be gradually clearing, and a stronger feeling is reported from the American markets, where there is apparently a tendency on the part of large distributing trade interests to accumulate supplies, instead of depressing the market. The industrial outlook in this country being

brighter, since the settlement of the engineering trades dispute, has already resulted in a much better trade demand, which, combined with a set-back in the dollar-rate of sterling and the cheapness of money, has been operating in the direction of a revival of speculative buying. It looks as though the renewed stringency in spot and near-at-hand spirit will become accentuated over the end of this month, as we suggested in our editorial article of May 20 last. Deliveries from stocks at this end in the course of June have considerably increased, and as arrivals from America are expected to be light in the near future, the inroads upon the comparatively small reserves available have rendered the market very sensitive. Our total imports for May amounted to 1,234 tons, against 334 tons only for the same month last year, but the total for the five months represents 5,898 tons, compared with 2,355 tons in the same period last year. The position seems similar to that which existed at about this time last year, both in regard to the price and the London stocks, which were then at a little under 10,000 barrels. The Savannah quotation is now considerably higher than a year ago, but, so far as the London parity is concerned, this is offset by the much higher rate of the American exchange. In our previous article referred to above, we stated that "there was no doubt that a period of scarcity had been entered upon, such as has seldom been experienced in the history of the trade," and, so far as can be gathered from certain particulars received just lately from the chief American producing centres, this opinion is confirmed. The total stocks that existed at Savannah, Jacksonville, and Pensacola a month or so ago were only about 7,000 barrels, or 27,500 barrels less than a year previous. These returns, we are told, may be regarded as fairly accurate. The progress of the receipts of new crop spirit so far at the centres mentioned has not differed much from that of the previous season. Yet it is asserted by an authority at Savannah that there are indications leaving but little doubt that a considerable shortage in the crop yield will be revealed later in the season. This contention is to some extent based on the fact that the proportion of the high grades of resin, which are now being marketed, has proved exceedingly small, and it is now suggested that operations this season will be completed earlier than has been usually the case in previous campaigns. American circles more or less identified with the producing side of turpentine believe that the genuine article is worth considerably more than the current price, owing to comparatively high-production costs, and there is presumably some truth in this. Therefore, clearer indications of current supplies proving inadequate to meet an eventual enlargement of the world's demand later on will doubtless be made the most of by trade distributors and speculative cliques, at the expense of the consumer. Meanwhile the fact remains that the new season in the United States has been entered upon with limited reserve stocks as shown above, so that the current supply of new crop is susceptible of being more speedily absorbed this season. This in itself is a sufficient reason for assuming that firmer markets will become inevitable under any pressure of trade demand. Within the month of June last year the London spot price fluctuated between 74s. and 85s., and a month later jumped to as high as 115s., after being as low as 48s. per cwt. in March. Such wide fluctuations in a comparatively short space of time were altogether out of proportion to the amount of trading done on this side. History may easily repeat itself within the current year,

but it is unlikely that the price will drop as low as it did in March last year, which was chiefly the outcome of a combination of exceptionally adverse circumstances following on the world's industrial crisis. The market must eventually be adjusted to a level at which producers' operations can be encouraged on an increased scale. During May and June the best of the production is usually experienced in the South Atlantic and the Gulf States, but the quantities actually marketed so far at the chief market centres have been moderate only, there being no pressure to sell, while it is claimed that the stocks available are already largely "earmarked." The accession of fresh supplies to this side from the Atlantic seaboard is expected to be very gradual as time goes on in view of the exceptionally strong statistical position, such as, it is contended, has hardly ever been experienced at this period of the year. The price in London on Monday reached 89s. for spot and June delivery, with September-December delivery at a backwardation of about 11s. per cwt. This amply emphasises the recrudescence of tight conditions, but, given an extension of forward business, prices in that direction will probably fully share in an advancing market.

Anglo-Australian Trade

THE Australian trading outlook and financial position is now generally a reflex of somewhat adverse commercial conditions in the United Kingdom, but at the same time it is interesting to note that our share of the Commonwealth imports of competitive manufactured merchandise during 1920-21 was 60.80 per cent., or greater than in any year since 1916-17, when it was 61.2 per cent. This we gather from a tabular statement showing trade of the United Kingdom, United States of America, and Japan, compiled from data supplied by the Commonwealth Statistician. From July 1, 1920, to June 30, 1921, the total imports of competitive manufactured merchandise from all countries into the Commonwealth amounted in value to £126,044,522, of which 60.80 per cent., or £76,620,169, was obtained from the United Kingdom. This compares with a total from all countries of £70,059,969 in 1919-1920, of which the United Kingdom sent £38,037,193, or 54.29 per cent. The diagram which we give below is arranged particularly



to show the percentages of competitive imports from the United Kingdom, United States, and Japan. By competitive imports is meant those goods in which the United Kingdom is interested as a competitor. The figures show a gratifying increase, although the pre-war level of 63 per cent. has not yet been regained. American trade during the period 1920-1921 decreased from 29.38 per cent. to 20.13 per cent., while Japanese trade also decreased from

11 per cent. to 3.88 per cent. The pre-war position of Germany will be noted. The diagram also shows the preponderating share of Australian import trade held by The diagram also shows the the United Kingdom up to 1916-17, after which the effect of the war is clearly shown. Among the imports in 1920-1921 were the following:

	All countries		U.K.		U.S.A.		Japan	
	£		£	%	1,241,040	%	£	% 1.8
Chemicals	4,637,410	2	,413,306	52	1,241,040	26.7	86,535	1.8
Paints and var- nishes	626,920		396,271	63	184,667			2.7
Instruments— Scientific, sur- gical, etc	1,125,158		465,441	41.3	575,719	51 1	15 619	1.3
Oils, fats, and waxes	493,336		200,820	1	,			12.8
Beverages—non- alcoholic	132,241		42,173	31.9	57,284	43.3	-	-

It will be seen from the above that the United States distinctly scores in surgical and scientific instruments and non-alcoholic beverages, and this has been the case for several years past. Apart from this, the figures in other directions illustrate the fact that British manufacturers and merchants have been and are looking well after the requirements of the Australian market, which is now second in importance as regards United Kingdom export trade.

Failure of the Dangerous Drugs Act

The opinion is held by people who are regarded as experts that the Dangerous Drugs Act has failed to effect its purpose. It has, in fact, proved an incentive to the smuggler and street-vendor, and in this way increased the criminal use of the drugs the sale of which the Act professes to regulate. We find this view expressed in the "English Review" for June:

There has been so much delirious nonsense written about drugs that sane meu may well despair of seeing the light. But it ought to be obvious that if England reverted to pre-But it ought to be obvious that if England reverted to pre-war conditions, when any responsible person (by signing his name in a book) could buy drugs at a fair profit on cost price, eocaine (say) at 16s. and heroin at 20s. the bottle of 10 grams—instead of as many pounds—the whole under-ground traffic would disappear like a bad drcam. It is possible, perhaps even probable, that for a month or two there would be an inercase in the number of fools who killed themselves in their folly, though personally I doubt it. But I have no shame in saying that, after a war in which But I have no shame in saying that, after a war in which we sent our sturdiest sons as sheep to the slaughter, we should not miss a few score wasters too stupid to know when should not miss a rew score wasters too stupid to know when to stop. Besides this we see, on the one hand, that the people who want the drugs mauage to get them in one way or another, at the cost of time, trouble, and money which might be used more wisely, and on the other, that the infernal suggestions of the Press, and the vile venality of the villains attracted to the traffic by the immense profits, are deliberately creating new addicts every day of people who the villains attracted to the traine by the limites profile, and deliberately creating new addicts every day of people who in the normal course of affairs would no more think of indulging in narcotics than a eat in a cold bath.

The unnecessary stringency of the Dangerous Drugs Act and the Regulations has defeated the purpose of the

Hague Convention.

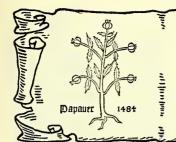
Summer Outings

Picnic at Rawcliffe Hall

MEMBERS of the Blackpool and Fylde Chemists' Asso-Ciation held an enjoyable picnic to Rawcliffe Hall, an old-time mansion, on June 15, and were accompanied by members of the Fleetwood Chamber of Trade. The party made a two-hours' tour round the district, and after the bowls, tennis, and other games were provided for the prictors. for the visitors.

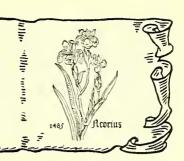
Southport Chemists' Motor Run

THE Southport Chemists' Association had an enjoyable motor charabanc run on June 15 through Freshfield, and Ince Woods, to Barton, where refreshments were supplied by the kindness of Mr. and Mrs. Charnock. The return journey was made through Scarisbrick.



Old Herbals and Herbalists

By C. C. BELL





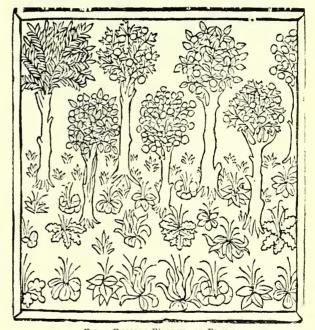
O many articles upon herbals have at various times been contributed to The Chemist and Druggist by myself and others that it is difficult, in resuming the subject, to avoid repetition. The field, however, is a wide one and of enduring interest; many once famous writers have not even been named in the contributions referred to, and of many others much remains to be said. Mrs. Arber's "Herbals, their Origin and Evolution," to which every subsequent writer must

nccessarily be greatly indebted, has given new interest to many old books, and enables us without much trouble to take a comparative view of all such as come within her period (1470-1670). As regards foreign works, it would be idle, even if it were within one's power, in a brief essay like this, to add anything to what she has told us, and I shall content myself, after a rapid survey of this outer field, with a few more particular remarks

THE EARLIEST-KNOWN BOTANICAL WOODCUT
From Konrad von Megenberg, "Das puch der Natur," printed
at Augsburgh, 1475. The first book with a woodcut of plants
intended for illustration and not decoration.

upon our chief English herbalists and their works, based. as far as possible, on personal knowledge and judgment.

In this, as in every department of human knowledge, we derive a good deal from the ancients, and the first name to be mentioned in our general survey is that of Aristotle. The greater part of his botanical writings is lost, however, and it is to his pupil Theophrastus that we are chiefly indebted for our knowledge of the older Greek botanical science. He mentions about 450 plants, and may now be read in English in the translation in the Loeb Classical Library (published since Mrs. Arber's book). Dioscorides, who flourished in the first century of the Christian era, exercised a dominating influence on later writers down to comparatively modern times. Albertus Magnus (thirteenth century) drew a great deal of his botanical lore from classical sources, through



EARLY ENGLISH WOODCUT OF PLANTS
From the English edition, printed by Wynkyn de Worde about 1495, of Bartholomaus Anglicus' "Liber de Proprietatibus Rerum." Probably the first botanical illustration in an English printed book. First produced in Germany about 1470, without illustrations.

Nicolaus of Damascus, but added something of his own. The last important representative of Aristotelian botany (says Mrs. Arber) was Andrea Cesalpino (1519-1603). He was somewhat of a survival, but all the later herbalists (she adds) adhered closely to the classical tradition. Johnson, Gerard's editor, by the way, regards the return to classical sources as a rescue "from the confused and barbarous writings of the middle times," among which he classes the "De Proprietatibus Rerum" of Bartholomew Glanville, which contains a good deal of herbal lore (such as it is), and the "Ortus Sanitatis," published at Mainz in 1491, a translation in the main of the earlier German herbal, the "Herbarius zu Teutsch"; and begins his description of works that really count with the

"De Natura Stirpium" of Jean Ruel, a Frenchman who in 1480 translated Dioscorides into Latin, and whose own treatise was "gathered cut of sundry writers, especially Greeks and Latines." Earlier by a year than the "Herbarius zu Teutsch" was the "Herbarius in Latino," or Latin Herbal, printed at Mainz by Peter Schöffer in 1484. The German Herbal is the more important of the two, and excels it particularly in its figures. The Germans now began to be very active, and works by Brunfels, Tragus, Fuchs, and others followed each other in rapid succession. Otto Brunfels, born 1464, was a Carthusian monk who fled from his monastery and became a physician at Berne. The first part of his herbal was published at Strasburg in 1530. It is chiefly valuable for its beautiful



FRONTISPIECE TO GERMAN HERBARIUS ("HORTUS SANITATIS")
This woodcut, reversed and with slight modifications, appears in many of the numerous editions of the great German Herbarius, or "Hortus Sanitatis." The original folio, the "Herbarius zu Teutsch," known also as the German Ortus, was printed at Mainz, 1485. The iris (Acorus) drawing in the heading to this article is from the 1485 folio.

illustrations from wood-blocks executed by Hans Weidlitz. Johnson says "he was the first that gave the lively figures of the plants he describes," which, however, numbered only 288. It must not be understood that Brunfels' was the first illustrated work of the kind. This honour belongs to "Das puch der Natur" of Konrad von Megenberg (1478), which is celebrated for its woodcuts. Brunfels' illustrations, superior as they were to any that had preceded them, were surpassed by those of Gesner which appeared in the "Epitome Matthioli" of Camerarius, published in 1586, and more notably still by those in the "Phytobasanos" of Fabio Colonna (1594), the first plant illustrations from etchings on copper. Colonna was by profession a lawyer, whose interest in herbs was aroused by the difficulty he experienced in finding a remedy for epilepsy, from which he suffered. After Brunfels comes Bock, better known as Tragus, born

1498, a Protestant preacher who practised medicine. "Kreutter-His buch " excels in its descriptions of but the plants, plates good, being copied from those in "De His-Fuchs' Stirpium." toria Fuchs, the third of the Fathers of German Botany," was younger than Tragus, but published his book three years later than the first appearance of Bock's, and it was in the second edition of the latter that Fuchs' figures were used. Fuchs was more learned and more critical than either of his precursors. Volerius Cordus (1515-1544), an ardent student,



FROM THE "HERBARIUS ZU TEUTSCH," 1485 Coloured woodcut as chapter heading in the original edition of the great German Herbarius, Its woodcuts were the source of nearly all herbal illustrations for fifty years.

died too young to achieve much. His "Historia Stirpium," published under the editorship of Gesner after his death, is highly spoken of, and he must be mentioned as the author of the first official Pharmacopæia ever published, the "Dispensatorium" of Nuremberg (c. 1546).

In Italy, Matthiolus published his commentaries on Dioscorides in 1548; Dodoens, in Holland, his "Cruijdeboeck" in 1554; and so the stream went on, every decade down to the end of the century contributing more or less important works. The seventeenth century was almost equally prolific; the chief Continental herbalists after those already named were the Frenchman, Jacques d'Aléchamps, whose "Historia plantarum," published in 1586, was the most comprehensive work of the kind that had yet appeared, containing about 2,700 figures; Giambattista Porta,* who is credited with the origination



Two imaginative woodcuts from the 1490, Strasburg, edition of "Hortus Sanitatis." The fruit of the Tree of Life is said to bestow "blessed immortality" on those who eat of it. Mythology and pseudo-science are frequently merged in these early works.

^{*} This refers to herbalists known chiefly as such only. Paracelsus held the doctrine.

of the doctrine of signatures—he is said to have been a native of Naples, and his "Phytognomonica" was published there in 1588; and Jacob Theodor (Tabermontanus), chiefly notable as the author of the "Neuw Kreuterbuch," a large, finely illustrated work. The figures were not original, but were from old wood-blocks afterwards acquired by the printer, John Norton, and used to illustrate Gerard's "Herball."

Konrad Gesner, born at Zurich in 1516, was a man of almost encyclopædic knowledge, and appears to have been a good botanist, but his great work on this subject was never published, though at the time of his death by plague, in his forty-ninth year, he had collected much material for it and about 1,500 drawings, mostly original, which, though some of them were used, as I have said, by Camerarius, did not see the light in full until 150 years after his death. His friend and correspondent Jean Bauhin, a native of Amiens, and Jean's brother Gaspard were of much greater importance for us, especially the latter. Much of his work, however, was rever printed, but his "Pinax theatri botanici" may almost be said to have introduced a new era. Mrs. Arber says it "converted chaos into order, since it contained the first complete and methodical concordance of the names of plants, and was so authoritative as to earn for the author the title of 'legislateur en botanique.'" The book, which appeared in 1623, dealt with about 6,000 plants, and much of it was incorporated in Parkinson's "Theatrum Betanicum," the very title of which is a reminiscence of that of Bauhin's masterpiece. Charles de l'Ecluse (Clusius) was earlier than the Bauhins, but I have left him and Mathias de l'Obel to the end of this survey because they bring us home to our own country, De l'Ecluse as furnishing Lyte with the version of Dodoens which was the occasion of his "Nieue Herball, or Historie of Plantes," and Lobel (to give his name in the more usual form) as being by adoption an English botanist.

The first English work containing any systematic account of medicinal herbs is the Anglo-Saxon "Leechbook," of which a description was given in the C. & D., June 25, 1887. It is, of course, in manuscript, but a version in modern English by the Rev. Oswald Cockayne was published in 1864, and there is a copy of the book in the Pharmaceutical Society's library. The herbal portion of this "Leech-book" is translated from the Herbarium of Apuleius Platonicus, a work, as is supposed, of the fourth or fifth century, first printed about 1484. This is the earliest work to which the name "Herbal" is known to have been given. Sir Theodore Mayerne, to

whom our Lon-Pharmadon copœia owed so much, possessed one of the then extant copies of this work, and probably he found it useful, though it contains much "lore" which the science even of his time would reject. The "Leech - book" has descriptions about 185 plants (some of them are de-scribed more than once under the same or different names). Some of them are, too, diffi-cult to identify, as, for example, the astereon, which "shines by night as a star in heaven, and he who sees it not witting what it is supposeth he hath seen an apparition and so fleeth." There is a somewhat similar account of the man-drake. The British Museum

fleeth." There is a somewhat similar account of the mandra ke. The British Museum has a tenth-cen-

DRAWING FROM DIOSCORIDES MS., FIFTH-

Brusinaken

DRAWING FROM DIOSCORIDES MS., FIFTH-SIXTH CENTURY

This wonderful drawing of white bryony
is one of many in the famous Dioscorides

tury MS. of the Herbal of Apuleius (the original of which is said to have been, when perfect, a magnificent work)—Cotton MSS., Vitellius, c. iij. f. 19. Another carly manuscript English "Herbal" is also preserved in the

Museum (see C. & D., January 29, 1910). This is known as "Macer Floridus de Viribus Herbarum.' deals with seventy-seven plants in alphabetical order, and is written in Latin hexameters, the supposed author being a physician named Odo. of uncertain date, who veiled his identity under the name of the poet Æmilius Macer, a contemporary of Virgil's. Macer's name was also borrowed for several early printed English herbals which were little more than reprints of the one known as Banckes', the earliest extant. The title-page of Banckes' book runs: "Here begynneth a newe mater, the whiche sheweth and treateth of ye vertues and propertyes of herbes, the which is called an Herball. Rycharde Banckes, London, 1525." It has not been traced to any earlier work, and consists. at least in part, of original matter. It is written in an attractive, quaint style, with-

NOMENHERBAF MANDRAGORA





THE MANDRAKE OF FANCY
The first woodcut is from the Herbarium of Apuleius Platonious of about 1484, the earliest book called a herbal. The second is from Fuchs' splendid "De Historia Stirpium" of 1542.

out illustrations, and was very popular, as is shown by the numerous reprints. It consists of 210 articles in about 800 pages (not numbered), and is printed in black-letter. A short extract will show something of its quality:

"Saxfrage

Dacer adelt: Difce quo duce vone erisi



Title-page of Macer's Herbal, 1506
Earliest edition was printed about 1489, under title, "Macer Floridus de viribus Herbarum." Macer is supposed to be the pseudonym of a physician known as Odo. The herbal describes certain plants in Latin verse, which is said to have been written originally in the tenth century.

This rote [sic].is hote and dry in the iii degre. For the stone sethe the rote of it in wyne and drynke it. Also it is good for the disease of the colyke and the strangurye. And the powder of it if it be eten with a egge it is good for the same. may be kepte in his vertue iii yere." In some of the articles the writer waxes eloquent, and indulges a very fancy pretty that carries him far beyond the strictly medicinal aspect of

his subject.

"The Grete
Herball,"
printed by Peter
Treveris in 1526
and reprinted
in 1529 (there
was also a later
edition in 1561

with Askham's name to it), is a much more famous work than that of Banckes. It is confessedly a translation of "Le Grant Herbier," a French work of uncertain origin, now supposed to have been derived from the Italian manuscript known as "Circa instans," to which the late Dr. McWalter called attention in an interesting letter in the C. & D., September 27, 1919. It has been alleged that an earlier edition of "The Grete Herball" appeared in 1516, but I have not been able to verify this. The title-page and colophon of the edition of 1526 are against it, Mrs. Arber has never met with it, nothing is known of it in the British Museum, and it is not mentioned in the Hand List of British printers, in which the date of the alleged printer, John Kynge, is given as "before 1554." We may, I think, assume that Ames, who is cited as an authority for it, made a mistake. Treveris is said, in the Dictionary of made a mistake. Treveris is said, in the Dictionary of National Biography, to have begun printing in 1522 Under the curious plate at the end of the book he says: "Imprented at London in Southwarke by me Peter Treveris dwellynge in the sygne of the Wodows. In the year of our lorde god MDXXVJ the XXVII day of July." This seems conclusive. The book itself is one of the most interesting of its kind. It is badly illustrated so far as the formers in the text are concerned, but has a far as the figures in the text are concerned, but has a very striking engraved title-page here reproduced, the very striking engiaved the page here reproduced, the interpretation of which I commend to C. & D. readers. Along with herbal lore, it professes to give a "full parfytc understandynge" of the book lately printed by Treveris on the art of surgery, and contains much other curious information on matters more or less related to medicine. We are warned, for example, against bathing in cold water, many who have done it having "dycd or they came home"; and I grieve to add that it is thought necessary to warn readers of the frauds and sophistications practised by dealers in drugs. It is, in short, a work in which one may still dip with certain delight and occasional profit. It concludes with a treatise on the signs of diseases and an explanation of obscure terms. There is an index of diseases, but none of the plants.

The most learned and original of our early herbalists was William Turner (born between 1510 and 1515 at Morpeth, Northumberland). He was educated at Pembroke Hall, Cambridge, and became equally celebrated as a divine, a botanist, and a physician. In the first capacity he attained to the deanery of Wells, in the second to the authorship of works which still command respect, and in his double character of minister to both body and soul he became chaplain and physician to the Lord Protector Somerset. He was an ardent adherent of the Reformation, and was more than once driven abroad by persecution, his theological writings being in 1546 propersecution, his theological writings being in 1546 prohibited by proclamation. When abroad he cultivated the acquaintance of several of the leading botanists of the day, collected plants, and increased by every means in his power his knowledge of botany and medicine. The first fruits of these studies was the "Libellus de re herbaria novus" (1538), which was followed ten years later by a work on the "names of herbes in Greke, Latin Englishe Duche and Frenche with the commune. Latin, Englishe, Duche, and Frenche, wyth the commune names that Herbaries and Apotecaries use," and finally by his masterpiece in this kind, his "Herball," which appeared in three instalments, the first of them in London in 1551. The complete work was published at Cologne The second and third parts of the work are espects superior to the first. He arranges in 1568. in many respects superior to the first. He arranges much of his matter under the names of his authorities, as, for instance, "Of Pepper out of Dioscorides. Out of Simeon Sethi." When not speaking from his own observation he relies on these, on Pliny, on Serapio and the other Arabians, Galen, Mesue, Alexander, Theophrastus, etc. The arrangement is alphabetical, no attempt being made at classification. He excuses himself for undertaking this work against the opinion of those who think it not well to make medical lore too cheap. Solomon (he says) disputed of herbes, shrubs, and trees so wisely as to show the importance of the study, as did also Galen and Dioscorides. "Did they" (he asks) "give occasion unto every old wyffe to take in hand the practyse of physick? Did they gyve any just occasyon of murther? If they gave no occasyon of

ilandying of all maner of herdes & they gracyous bettues whiche god hard opdepried for our professous welfare and helthfor they below ture all maner of opsisales and lekenelles that fall or mystortune to all maner of creatures of god created practyled by many expert and wyse maylers as America other. As Allou grueth parfyte understandyings of the bookelately prysted by merecent true its maner the noble expertice of pertuous hand warde of surgery.



TITLE-PAGE TO "THE GRETE HERBALL," 1529

A delightful page in red and black letter, with a herb garden wherein flourish mandrakes of both sexes. The work is a translation of "Le Grant Herbier," Paris, about 1526, and the cuts of plants which illustrate it are poer copies from the German Herbarius.



From the Latin Herbarius, 1484.
See also heading and initial letter
to this article.



From Lecnhard Fuchs, "De Historia Stirpium," 1542, one of the finest sets of drawings in a sixteenth-century herbal.



Mulberry from Hieronymus Boch, "Kreuter Buch," 1551. Most of Boch's woodcuts of plants are copied, but the cuts of trees are new. Here the artist includes the "lamentable history" of Pyramus and Thisbe.

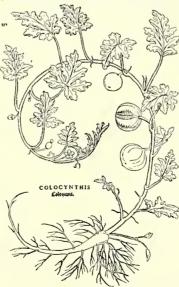
HERBA'ARGIMONIAL



From Herbarium of Apuleius Platonicus. Probably existed in MSS. centuries before printing.



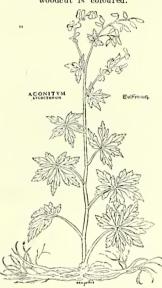
Συφοιόφει Cactetrau. From Otto von Brunfels, "Herbarum Vive Eicones," 1530. This work represented a great advance in botanical illustration.



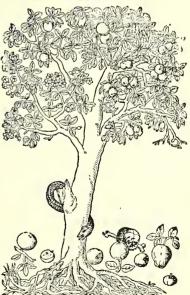
A third example from Fuchs' great work. Mrs. Arber considers that from the artistic point of view these wood engravings reached the zenith of 16th-century herbal illustration.



"Laudanum ein gumi," from German Herbarius." 1485. The woodcut is coloured.

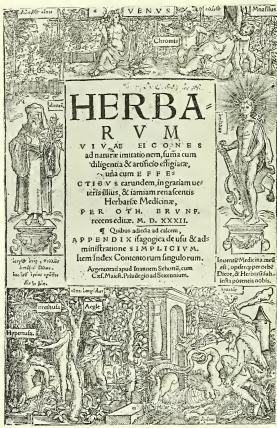


Fuchs, 1542. His drawings show a genuine return to Nature as compared with the conventionalised woodcuts of earlier herbals.



Apple Tree from Boch's "Kreuter Buch," 1551.

Not only are flower, fruit, and seed shown, but also the legendary associations of the apple tree.



OTTO VON BRUNFELS, "HERBARIUM VIVE EICONES," 1532

First of the "German Fathers of Botany." His title, "Living Pictures of Plants," indicates his principle of giving drawings of actual plants instead of copying previously published engravings.

murther then gyve I none." His descriptions are good; he has comparatively little trace of the old superstitious notions about herbs, he upholds experience against authority, and almost goes out of his way sometimes to correct the errors of earlier writers. A third of his book, it should be added, deals with plants not mentioned by the ancients. His plates are very good, but they are not original.

Mathias de l'Obel Lobel), born at Lille in 1538, was another learned botanist. He studied at Montpelier under Rondelet, and there met Peter Pena, who afterwards collaborated with him in the "Stirpium adversaria nova," one of the most important herbals of its time. Ît was written in London, whither Lobel came, pro-bably, in 1569. Here he Here he married an English lady, who helped him in the preparation of the work. In 1592 he accompanied Lord Zouche on an embassy to the King of Denmark, and on their return to England was given the charge of his lordship's



HENRY LYTE'S TRANSLATION OF DODOENS' "CRUYDEBOECK," 1578

TRANSLATION OF DODOENS "CRUTDEBOECK," 15/8
Rembert Dodoens, Belgian botanist, published his herbal in 1554, using Fuchs' wood-blocks. Lyte translated and corrected the French version of Dodoens in 1578.

GALIENVS

2 is treiter bitch ober Gerbarius.

2 as bitch on allen freitern/wires, lenuth andern bingen/wie mans binchen foll singe fundetheir der menichen/von neuwem corrigiert und gebeffert.

Them wie man verston soll bie gradue- Ale was mandgly bas frain stemansken/onen ober veter ben geab vor int un track ausgangen.

ATE D. XXX.

"Das Kreuter buch oder Herbarius," Strassburg, 1530 The drawings of this fine title-page have something of the character of Cranach. It is noticeable also for its tribute to Galen and Æsculapius, rather than to Dioscorides.

physic garden at Hackney. He was afterwards appointed botanist to King James I., and for some time lived retired at Highgate, where he died in 1616. The "Ad-versaria" is a book of some 450 pages, sexto. The titlepage has a map of the greater part of Europe, with part of Asia and of North Africa. Though published in London, it can hardly be classed with English herbals, being written in Latin. Its date is 1570. Several subsequent editions were issued from Antwerp, where it was also translated into Flemish and published under the title of "Kruydtboeck." It is chiefly remarkable for its partial (and imperfect) anticipation of the modern classification of plants. Lobel's system was based on the general habit of the plant and the shape of its leaves, and, though inadequate, it was a great advance on all previous modes. That it was accepted as such at the time is shown by the fact that, though his illustrations had previously been used in works by Dodoens and de l'Ecluse, they were after the appear-



TITLE-PAGE TO FIRST EDITION OF GEBARD'S "HERBALL," 1597

Gerard adopted and completed a translation of Dodoens' herbal and published it as his own. He took the blocks from the "Neuw Kreuterbuch" of Tabernæmontanus, 1588, which were based lergely on Fuchs.

ance of his books published by Plantin in an album of woodengravings arranged according to his scheme. On page 65 of the "Adversaria" he explains the system on which he has so far proceeded in the words: "à Gramineis Legetibus, Harundinibus ad Acoros, Irides, Cyperos, hincque Asphodelos bulborum uniceorum Caepaceorumve naturam praetervecti sumus."

Of Lyte's and Gerard's herbals it would be improper to speak without reference to Dodoens, upon whose works theirs were founded. Rembert Dodoens was born at Mechlin in 1517, and became in turn physician to the Emperors Maximilian and Rodolph II. His "Cruydeboek," published in 1554, appeared almost simultaneously in the French translation of de l'Ecluse under the title of "Histoire des Plantes," and it was from this version that Henry Lyte made his "Niewe Herball or Historie of Plantes," of which an account was given in the C. & D. for July 30, 1892. This is a folio of over 800 pages, printed (like Turner's) in black-letter, and illustrated with the same excellent figures as had appeared in the



JOHNSON'S EDITION OF GERARD'S "HERBALL," 1636

Published 1633, reprinted 1636, Apothecary Johnson greatly improved and enlarged Gerard's book, correcting many errors, and it is on his work that Gerard's reputation largely rests.



JOHN PARKINSON'S "PARADISI IN SOLE PARADISUS
TERRESTRIS," 1629

Parkinson published both this work, with its punning title ("of park-in-sun") and a larger work, "Theatrum Botanicum," 1640. French version, many of which, originally cnt for Fnchs' herbal, are found also in Turner. Of the 870 which Lyte gives, thirty, however, are his own, and there is some original matter in his text, as well as a good deal from later works of Dodoens than the "Crnydeboeck." Lyte, who was a stndent of Oxford, was a man of means, and though he does not profess originality and may perhaps be regarded as somewhat of an amateur, his book is one of the pleasantest of its kind, delightfully written, and showing a good first-hand acquaintance with his subject. It was first published in 1578, and was several times reprinted, but without the plates. Many years ago I was fortunate enough to pick np a copy of the first edition at Nottingham, wanting the title-page, part of the index, and a few leaves of the text, for 10s. There are some commendatory verses, both in English and Latin, prefacing the translation; and one of the poets says very truly of Dodoens' book that

Lyte, whose toyle hath not been light to dye it in this grayne, Deserves no light regarde of us; but thankes and thankes agayne.

"The Herball or Generall Historie of Plantes" of John Gerard, printed by John Norton in 1597, and reissued in 1633 (this edition was reprinted in 1636) in a greatly enlarged and improved form under the editorship of Thomas Johnson. "Citizen and Apothecarye of London," has brought its nominal author a great deal more credit than he deserved for it. However praiseworthy as a gardener (and in this character he deserves all the praise we can give him), his behaviour as an author, or rather as a plagiarist, deserves little but reprehension. The story of his dishonest dealings was told at length by Mr. Octavius Corder in his presidential address to the British Pharmaceutical Conference at Nottingham in 1893, and may be read in the C. & D. for August 19 in that year. Mr. Corder's address contained several crrors on the general subject of herbals, and he spoke much more highly of Gerard's work than I should do; indeed, I am inclined to say that the value of the "Herball" was mainly due to Johnson, whose edition it is that has made it so deservedly popular. The commission for the work, which was to have been an acknowledged translation of the "Pemptades" of Dodoens (1583), was given by Norton to a Dr. Priest, who died,

(though not so large as Parkinson's) of over 1,600 pages (the pagination is occasionally faulty), containing about 1,800 woodcuts, the source of which has been already mentioned. In one thing Gerard excels, and must have credit given him: he has an attractive, intimate style, and abounds in personal touches which bring him closer to the reader than is usual in the writers of such books. We seem almost to know his garden in Holborn, and there can be no doubt that ne had a very real enthusiasm for his work there. He was born at Nantwich, in Cheshire, became a "Master in Chirurgerie" as well as a gardener, died in 1612, and is buried in St. Andrew's, Holborn. Johnson, his editor, was an apothecary, and had a garden of his own on Srow Hill. He published descriptions of several botanical excursions in England and Wales, but is chiefly known by his connection with. Gerard's book.

Seven years after the first appearance of Johnson's Gerard there was published a still larger work, and one in some respects superior to it. This was the "Theatrum Botanicum" of John Parkinson, the author of an earlier work on garden flowers with the punning title "Paradisi in Sole [Park in Sun] Paradisus Terrestris." The full

if raradisus Terrestris. The full title of the "Theatrum" ran thus: "The Theater of Plants, or An Herball of large Extent, Containing a more ample and Exact History and declaration of the Physicall Herbs and Plants that are in other Authors, encreased by the accesse of many hundreds of new, rare, and strange plants from all the parts of the World, with sundry Gummes and other physicall materials than hath beene hitherto published by any before; And a most huge demonstration of their Natures and Vertues." This brave boast is borne out by the contents of the book, which almost justify the concluding lines of some laudatory verses prefaced to it:

If any in this subject seek more now, Nature must adde to what th' hast done: not thou.

The classification of the plants dealt with is perhaps the weakest feature of the book, consideration being had to Lobel's arrangement. In other respects Parkinson pillaged Lobel audaciously, but for his order of treatment he substituted a division into seventeen "Tribes," according to their supposed virtues, as, for example, "Sweet Smelling Plants, Vulneraries, Saxifrages,

Plants," Purging Plants, Vulneraries, Saxifrages, etc. Even so some refuse to submit to such treatment, and are classed as Miscellanea, or Strange and Outlandish Plants. The plants dealt with number nearly 3,800, against Johnson's 2,700, and not only are the articles describing them, in consequence, more numerous, but they are often of much greater length than those in the earlier work. Medical interest predominates throughout, but Parkinson goes at great length into philological and other matters of more general interest. He incorporates, as I have said before, nearly the whole of Bauhin's "Pinax," and travels beyond his brief to describe such non-vegetable matters as the unicorn's horn and mummies as used in medicine. As a specimen of his thoroughness I quote part of what he tells us of the provenance of rhubarb: "Assuredly that Rubarb which is used now adayes in all the world, I am sure in all the Christian countries in this part of the world, commeth chiefly from the country of China in the East Indies, and hath been brought by Arabian, Turky, and other Merchants in former times from thence overland by Caravans (as they call them) that is a number of Merchants and others having Camels laden with it and other manner of drugges there to be had, wherewith they

PICTORES OPERIS,

Seinricus Kullmaurer.

Albertus Meger.



THE ARTISTS OF FUCHS' "DE HISTORIA STIRPIUM," 1542

The two draughtsmen who prepared the illustrations for Fuchs' great work. Fullmaurer drew the plants from the living specimen, Meyer copied his drawings on to the wood, and a third cut the blocks. Fuchs expressed his entnusiastic gratitude to his artists in his preface.

says Johnson, "immediately before or after the finishing of this translation." Gerard obtained possession of the work, and published it as his own, disguising the fact that it was a translation by altering "the generall method of Dodonæus into that of Lobel," and referring to Priest's version of the former merely as a "thing of heare-say." He added, indeed, some matter from other sources, but, says his extremely candid editor, "his chief commendation is that he, out of a propense goodwill to the publique advancement of this knowledge, endeavoured to performe therein more than he could well accomplish, which was partly through want of sufficient learning." It is perhaps hardly fanciful to see in the portrait of Gerard prefaced to his book, "so picked, so spruce," so evidently on show, something consonant with the character we should expect in a man capable of such tricks as these. His credulity in the matter of the barnacle- or goose-tree, of which an absurd figure appeared in the first edition of his book, must not be made too much of, since it was shared by Turner, Lobel, and others, but it is clear that he was very shaky in his botany, and Johnson had no light task in correcting his errors, The "Herball" of 1636 is, however, one of the most notable works of its kind. It is a massive folio volume

served all this other part of the world, unto Cairo and Alexandria in Egypt, Damascus, and Tripoli in Syria, and from thence (as from the store-houses) into other countries; but now since the passage into the East Indies by sea hath beene knowne, and that it hath been brought unto us that way, there hath little or rone been brought by the Caravans over land, as in the former times." Parkinson's plates are mostly copied from Gerard, but appear to somewhat better advantage on account of the superior quality of his paper. The Herbal, too, is exceptionally well printed, in admirable type: this distinction it shares with Salmon's "Botanologia." Parkinson was born in 1567, probably in Not-tinghamshire. He was for a time apothecary to James I. and botanist to Charles I., and had a garden in Long Acre, well stocked with rarities. His portrait in the frontispiece to the "Theatrum Botanicum" is that of a

rough, bluff, honest man.

Of Nicholas Culpeper it is not necessary to say much. The only book of his which concerns us here is the one which appeared in 1653 as "The English Physician Enlarged," described on the title-page as "Being an Astrologo-Physical Discourse of the Vulgar Herbs of this Nation: Containing a Compleat Method of Physick, whereby a man may preserve his Body in Health; or Cure himself, being Sick, for three pence Charge, with such things only as grow in England, they being most fit for English Bodies." As practically the whole of Culpeper's medical philosophy

is here set forth, and since the book was reprinted as late as last century and is well known, nothing more need be said of it. Culpeper, who was for some years in practice as a physician and astrologer in Spitalfields, died in 1654 when only thirty-eight years old, worn out by his excessive labours and violent temperament.

William Cole (or Coles), Fellow of New College, Oxford, who "lived and botanized" at Putney, combined the double character of a keen and diligent student of Nature with that of a philosophic thinker who followed his theories far beyond the bounds of observation, and so, in spite of his real knowledge of herbs, landed himself in a maze of absurdities. He rejected and ridiculed Culpeper's astrological doctrine, but took up the equally



LEONHARD FUCHS (1501-1566)

Mrs. Arber, in her "Herbals," considers that "the illustrations to Fuch's herbals represent the highwater mark of that type of botanical drawing which seeks to express the individual character and habit of each species." He is shown holding a spray of veronica.

false one of plant-signatures, of which he became the chief English exponent.
According to this doctrine God has stamped upon every herb some distinct form or colour, visibly marking its use in some particular disease. Thus garlic, because its "tunic" is ruddy, expels blood, and its hollow stalk denotes its use in affections of the windpipe. Nor was this the only superstition which Cole entertained. He was a firm believer in witchcraft, and says of vervain that its use by witches is proved by the case of "the late" Anne Bodenham of Salisbury, who "sent her ruffian-like spirits' gather it and dill for her wicked purposes. (Meg Merrilies, by the way, says that

Trefoil, Vervain, John's Wort, Dill, Hinder witches of their will.)

He tells us that a necklace of peony seeds will cure epilepsy; that unguentum sympatheticum made of the moss growing on a dead man's skull is a sovereign weapon-salve; that if children three months old are bathed in a decoction of wormwood they will never feel heat or cold; that rue planted among sage protects it from the poison of toads; that grapes will not keep in the same house with quinces; and many other such foolish notions, which were, however, current coin in his day. But, withal, he is of Simpling" and the more formal herbal, "Adam in Eden," from which I have been quoting. Fifty years later Linnæus was born. There-

after the herbalist gave way more and more to the botanist, and here, therefore, we may appropriately leave

the subject.

Notes on the illustrations are by "S. G. S.," who is largely indebted to Mrs. Arber's "Herbals" (Cambridge, 1912), where much further information of interest to students of herbals of the fifteenth to seventeenth centuries will be found.

It has been suggested to us that some of our readers may like to have prints or enlargements of the pictures used in this article for pictorial purposes in the pharmacy or in advertisement matter. We can arrange for the supply of these reproductions and will be glad to give

particulars on application.



Восн HIERONYMUS (1498-1554) From his "Kreuter Buch," 1551. He holds veronica



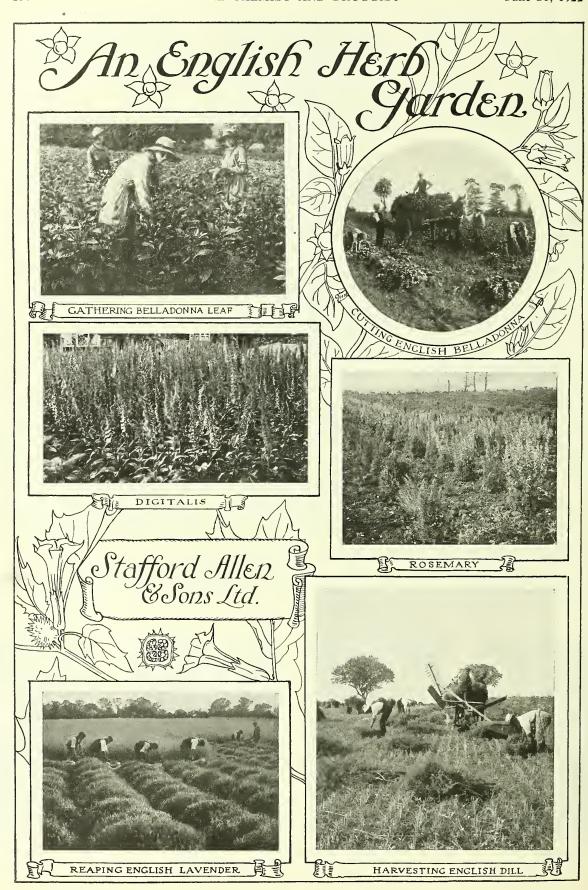
REMBERT DODOENS (1517-1585) From Lyte's "Niewe Herball," 1578.

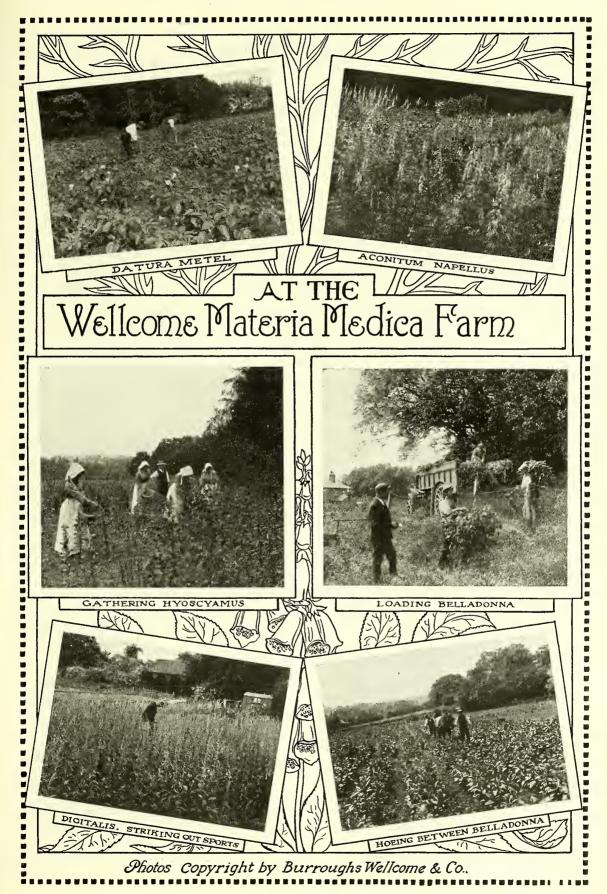


JOHN GERARD (1545-1607) From his "Herball," 1597. He holds a spray of potato.

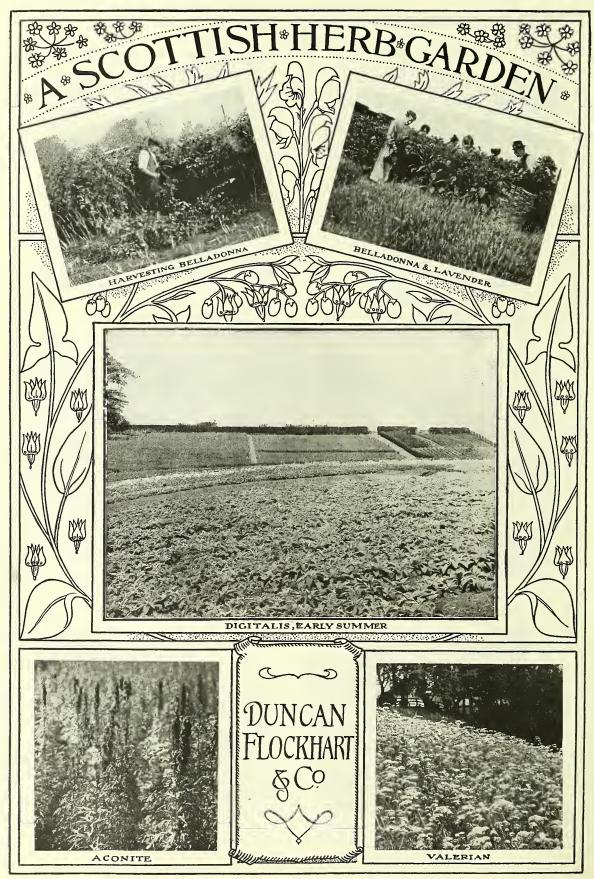


(1567-1650)his "Paradisi in Sole," 1629.

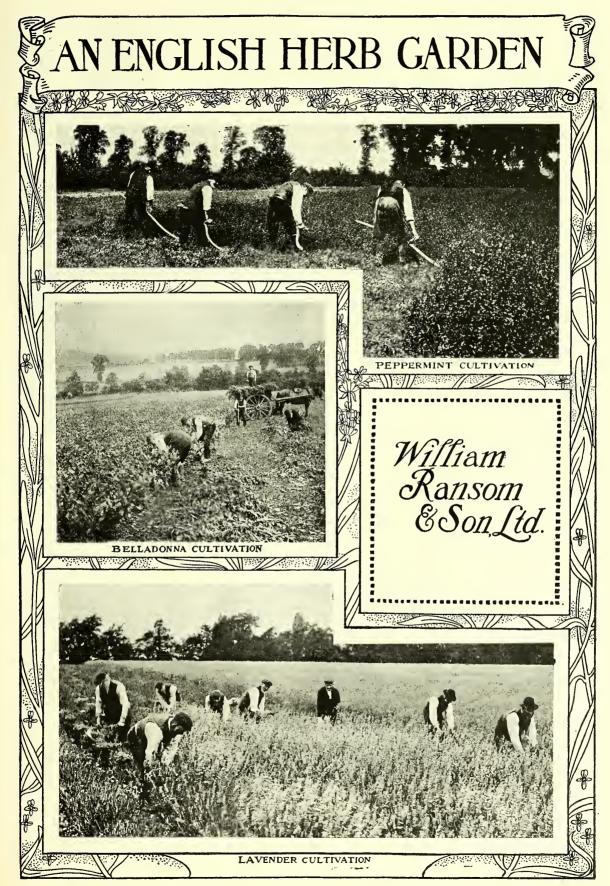


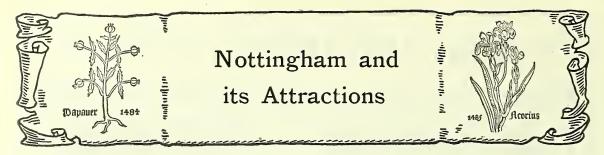


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LET John Speed, writing in the year 1611, give us an impression of Nottingham in a happily worded sentence. "Nottingham is," he says, "a Towne seated most pleasant and delicate upon a high Hill, for buildings stately and number of faire Streets surpassing and surmounting many other Cities, and for a spatious and most faire market place doth compare with the best. . ." Had he been alive to-day, Speed, who was a cartographer as well as an historian, would have told us, no doubt, that Nottingham is 123½ miles by railway from London; 27½ from Leicester; 15½ from Derby (to which it was

thus united in 1839); and 334 from Lincoln. No city of similar importance is more centrally situated, and few enjoy equal railway facilities-the journey from London, for example, occupying little over hours by the best trains. Although Nottingham is a great manufacturing centre, there is a welcome absence of the smoke and gloom that, a priori, might have been expected. For these reasons, added to the city's reputafor hospitality, it is a favourite meeting. place for conferences.

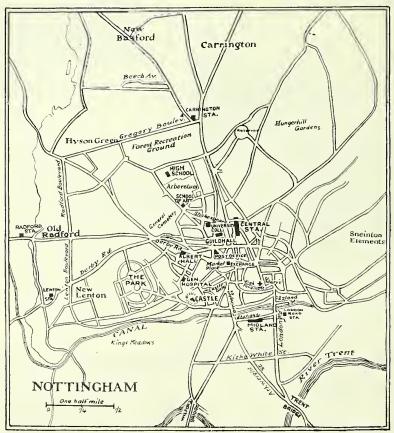
Omitting, for the moment, the Castle and University College, each of which has a section of this sketch to itself, we will glance at the chief places of interest. By whichever route the city

is entered, one is naturally led to the Market Place, which covers nearly six acres, and has the reputation of being the largest in England. It is surrounded by shops, hotels, offices, and so forth, with a practically continuous piazza on each side excepting that occupied by the Exchange, a severely plain building with the meat market on the ground floor and the Council chamber and other civic apartments above. The north side of the Market Place consists of the greater part of Long Row, Nottingham's best-known shopping thoroughfare. Close by is Exchange Alley—worth a visit from those interested in the byways of English literature in that it contains the birthplace of Henry Kirke White. Of

similar attraction, a short distance to the south-east, is the house in Weekday Cross in which Philip James Bailey, of "Festus" fame, was born. The most prominent feature of this part of the city is St. Mary's Church, a building of almost cathedral proportions, with a massive central tower forming a conspicuous landmark. Cruciform in plan, it has the advantage of having been erected, ecclesiologists tell us, during the best period of the Perpendicular style—the closing years of the fifteenth century. Remains of two older churches have been found, and let into the wall of the Lady Chapel is an alabaster

carving—Notting-hamshire is rich in alabaster ornaments — traditionally associated ally associated with Thomas à Becket. A paint-ing by Fra Bartolommeo, a friend of Savonarola and of Raphael, occupies a prominent place, and the stainedglass windows are numerous and beautiful. The mural tablets are numerous, also but, on the whole, incline to quaintness rather than beauty. "Near this place," reads one, "lies interr'd the body of Thomas Berdmore Esq. who acquired a liberal and ample Fortune by the profession of Dentist. Died the 7th of Novr. 1785 aged 45 years."
"Dentist" was at that time a relatively new word in the language, and it would be interesting know whether Mr. Berdmore was advanced enough to use the title be-

vanced enough to use the title before he made his fortune. In the sixteenth century the
main entrance to Nottingham was through the narrow
passage (Hollowstone) between two high precipices close
to and below the Church of St. Mary, and the traveller
was welcomed (the wind being favourable) by the fragrance emanating from the labours of the tanner and fellmonger. Bridlesmith Gate was then the principal
thoroughfare. The road or fairway was, of course, unpaved, and habitually dirty. Hollowstone still leads into
the city from London Road, and not so many years ago
the rocky precipices were plainly in evidence, with cavelike openings here and there. St. Peter's Church (an old
edifice of slight interest) and the Nottingham General



Hospital (part of which dates from 1782) are also to the south of the Market Place, and past the hospital lies the important residential district known as The Park, once the haunt of red deer, and still possessing a series of ancient caves concerning which local antiquaries have evolved many theories.



ST. MARY'S CHURCH

Turning northward from the Market Place, and passing the conveniently situated General Post Office, the visitor soon reaches the Guildhall, Burton Street, an imposing building erected in 1887-88, at a cost of nearly £100,000. Not far away is the Albert Hall, which seats 2,650 people and possesses an organ given by Sir Jesse Boot, Bt., at a cost of £4,000—one of many benefactions that, as our readers will remember, have been conferred on the city by Sir Jesse's public-spirited munificence. A few streets distant lies the Arboretum, a public park extending over seventeen acres, and yielding some excellent views from its highest part. A little further to the north the city possesses a still larger "lung" known as The Forest, which covers eighty acres and was formerly a racecourse. Between these open spaces stands the High School, founded in 1513 as a free grammar school. Three exceptionally fine roads, called the Gregory, Radford, and Lenton Boulevards, lead from this part of the city westward and southward to the neighbourhood of the Park and the Castle At the foot of the Castle rock—reached from the Castle entrance by walking down Castle Road from the Castle entrance by walking down Castle Road—stands what is believed to be the oldest public-house in the country, the "Trip to Jerusalem," which dates back authentically to 1199. It is a part of the rock itself, and remains practically as it has always been. Visitors who have time may like to make their way still further south, past the Midland Railway Station to the Trent Bridge, a structure built by the Corporation in 1869-71 in place of a picturesque bridge of Corporation in 1869-71 in place of a picturesque bridge of stone which had done duty for several centuries, connecting Nottingham with its suburb, West Bridgford. To the west of this bridge lies Wilford Bridge, and between the two on the city side of the river runs an embankment 200 feet wide. The construction of the Trent Bridge was one of many outstanding acts of civic enterprise undertaken by the Corporation, which owns the gasworks, the waterworks, and various electric undertakings, including the tramway system. A free library

was opened by the authorities in 1868, and ten years later the municipality erected University College, the first building of its kind in the country. A natural history museum was at one time housed in the University College building, but has lately been removed to Carlton Road. The Art Museum in the Castle, a school of art, and public baths are also owned by the Corporation. In 1897 Queen Victoria conferred on the borough the rank of a city—an honour well deserved. The staple industries of Nottingham are too well known to need more than a mention here, including as they do lace, hosiery, spinning, brewing, tanning, and cycle manufacture. A good deal, no doubt, will be heard of lace from the lady visitors during and after the Conference; and for that reason, among others, we content ourselves with a brief quotation from the official guide to the Art Museum. "Lace is divided into two classes, point and pillow. Point is made with a needle on a parchment pattern; pillow by the weaving, twisting, and plaiting of the threads with bobbins, upon the weil-known cushion which bears its name."

Nottingham in the Past

Etymology in its application to place-names is a dangerous game, even for experts. In the case before us it is safest to shout with the largest available crowd and to say that Nottingham's earlier form, "Snotingaham," has been interpreted as "the homestead of the Snotings," and has been conjecturally linked with the names of such villages as Snodland and Snenton, the latter of which is now incorporated in Nottingham itself. The Britons are said to have given it the strange-looking name "Tuiogobauc," equivalent to "place of caves." However this may be, the greater part of the city is built on an easily cut sandstone. The late Professor Blake wrote: "Most of the cellars in the centre of the city are rock cellars... Probably the whole city is more or less excavated like a piece of bored wood." Mammoth's teeth have been dug up in or near Island Street, now occupied by part of Messrs. Boots' factories; and ancient bronze objects have been unearthed in another street. It would appear, so far as research has gone, that the Romans had very little use for the site, the first date on which historians are agreed being the year 868, when the "burh" was captured by the Danes. There is evidence of a mint at Nottingham in the reign of the Saxon king Athelstan (925-940); the period, however, was one of alternating capture and recapture, and traces of Danish occupation remain to this day in the use of "gate"—e.g., Wheeler Gate—for street, and "bar"—e.g., Chapel Bar—for a gateway in the town wall. With the coming, of the Normans a remarkable



THE TRENT BRIDGE

arrangement took place, by which the town was virtuelly divided into two parts—one being subject to Norman rule and the other remaining under Saxon law. In Freeman's "History of the Norman Conquest" there are some interesting speculations on the causes of this state of things, which persisted so markedly that until

the early part of the eighteenth century the Market Place was divided into two by a wall, and until less than a hundred years ago each half of the borough had its own coroner. The military and political history of Nottingham has been largely influenced by the fortunes of its Castle, on gaining possession of which in 1153 Henry II. bestowed on the town its first charter. Its entrance into the industrial life of the country may not unreasonably be dated from that year. In

not unreasonably be dated from that year. In 1283 the right to elect a mayor was granted by Edward I., and in 1448 Henry VI. approved of the dignified designation "The Town and County of the Town of Nottingham." By a curious chance the borough has been associated with the personal history of some of the most unfortunate of English monarchs—John, Edward II., Richard II., Richard III., Richard III., and Charles I. At a Parliament held at Nottingham in the reign of Edward III., laws were passed for the purpose of encouraging the cloth industry. During the Wars of the Roses the town escaped lightly, but in the Civil War which ended with the execution of Charles I. there was more suffering, and the surrounding country went out of cultivation. The dismantling of the Castle and an outbreak of plague followed at no great distance of time, and Nottingham had to rcorganise its commercial connection. Near the close of the eighteenth century there was another period of economic distress, and the Luddite riots of 1811-16 once more held back

Luddite riots of 1811-16 once more held back the normal progress of the borough. A brighter aspect of its collective history, however, remains to be recorded. From the earliest years of the nineteenth century Nottingham has been interested in science—so much so that from the year 1804 onwards travelling lecturers, some of them of considerable standing, found it worth their while to give courses of lectures there. In the year just mentioned, for example, a Mr. Sylvester announced by posters his second course, in the first lecture of which "he will show the Deflagration of Metals, and the Inflammation of other bodies." Two years later "John Stancliffe, Bachelor of

that "seventy years ago there were at least six operatives' libraries supported by the weekly pence of working men. . . . That at the Rancliffe Arms, founded in 1835, had 2,200 volumes." The religious and charitable foundations of the Middle Ages, interesting as they are, must be taken for granted in a sketch of this kind. (Plumtree's Hospital, founded in 1392, is still in existence.) Of modern changes it may be recorded that in 1845 the commonable rights



CAPTAIN BALL STATUE, CASTLE ENTRANCE
INFIRMARY IN THE DISTANCE

of certain lands outside the borough were ended, thus allowing much-needed expansion; that in 1877 the area taken in was added to by the incorporation of the parishes of Snenton, Lenton, Radford, Basford, and Bulwell; and that in 1897, as already indicated, Nottingham became a city. One brief and ugly episode of the recent war remains a vivid memory for the inhabitants of the city and suburbs—the Zeppelin raid during the night of September 23-24, 1916. On the following morning everybody in the county, in all sorts of conveyances and on foot, appeared to be on the way to see what had been hit by the bombs. Although the enemy's objective was, no

doubt, some miles away, considerable marks were left in the centre of Nottingham. Between the premises of J. H. Haywood, Ltd., and the shop of Boots, Ltd., in Lister Gate, a great deal of damage was done. A look in at Messrs. Boots' place disclosed the fact that a slice had been taken off the back from roof to basement. Between Castle Gate and Greyfriar Gate a large amount of old warehouse property was demolished. Most of it, remarked a local observer, had been wanting some treatment of the sort for years!

Nottingham Castle

The earliest military use of the rock on which Nottingham Castle stands is unknown, but fortifications of some kind may well have existed there before William the Conqueror, passing through Nottingham on his way northward, left William Peverel in charge. The rock rises, on one side abruptly, to a height of more than a hundred feet; and a not very high order of intelligence was needed to grasp istrategic possibilities, especially in days when Sherwood Forest came

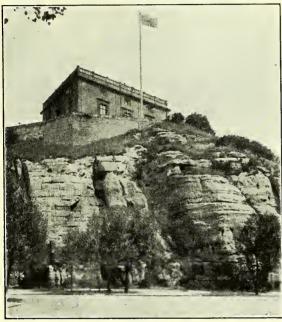
feet; and a not very high order of intelligence was needed to grasp its strategic possibilities, especially in days when Sherwood Forest came practically to the banks of the Trent, and that river had an unpleasant habit of overflowing. The Norman Castle, like all but the Tower of London and a very few besides, was built of wood; Henry II. spent large sums of money on it, and was probably the first of its owners to erect stone buildings within its precincts. So late as 1236 the outer defences were still of wood. It may be remembered that it was



THE CASTLE AND GROUNDS

Physic, of the University of Cambridge," gave a course of eight lectures on "Experimental Chemistry, Galvanism, Agriculture, and the Arts." The tickets were one guinea each, with the curious concession that a ticket admitted two ladies—a rather unflattering reflection on the calibre of their intellects. In addition, an artisan's library was founded as long ago as 1824; and Mr. W. P. W. Phillimore tells us, in "Memorials of Old Nottinghamshire,"

In Nottingham Castle that Prince John held out against his brother King Richard, yielding after a four days' siege. In 1330 occurred the memorable incident of Edward III finding his way into the Castle, with the help of the deputy-governor, by the secret passage since known as Mortimer's Hole, and still shown to visitors to the Castle Museum. Mortimer soon found his way to Tyburn. From a description of the structure given by Leland, the antiquary of Henry VIII.'s time, it is evident that the building was at one time of great extent and importance. From here Richard III. started on his last journey to Bosworth Field; and here, in an adjoining field, in 1642, Charles I. raised his standard in the Civil War. Shortly afterwards the place was seized for the Parliamentary Party by Colonel John Hutchinson, whose wife wrote a stirring history of the grim struggle. One episode may be quoted in part: "In the encounter, one of the Derby captaines was slaine, and five of our men hurt, who for want of another surgeon, were brought to the governor's wife, and she having some excellent balsoms and plaisters in her closett, with the assistance of a gentleman that had some skill, drest all their wounds . . . with such good successe, that they were all



THE CASTLE ROCK

well cured in convenient time. After our hurt men were drest, as she stood at her chamber doore, seeing three of the prisoners sorely cutt... bound up and drest their wounds alsoe..." During the Protectorate the Castle was demolished by order of the Council of State and its military history ended. William Cavendish, first Duke of Newcastle, purchased the ground shortly after the Restoration, and erected a mansion in which, a few years later, Princess (afterwards Queen) Anne took refuge during the events which culminated in the accession of William III. The building, which was not completed until after the first Duke's death, was in the Renaissance style, and although of palatial dimensions, failed to win the approval of connoisseurs of architecture. Above the doorway of the principal entrance was an equestrian statue of the Duke, who was the author of a treatise on horsemanship. In 1831 Reform rioters broke into the building and set it on fire: the fourth Duke of Newcastle was awarded £20,000 damages. The building remained in ruins until the Town Council acquired it for the purposes of a museum in 1875. The Museum, which is open free daily, except on Fridays, contains a representative collection of pictures, objets d'art, textile fabrics, pottery, and statuary, and is well worth a visit.

Early Industries

In 1257, Eleanor, queen of Henry III., was obliged to leave Nottingham Castle before the arranged time "owing to the smoke of the sea-coals." There is a doubt whether the peccant coals came from the county of Nottingham or from just over the border in Derbyshire; but the incident is evidence of the existence of collieries. Weaving was considerably more ancient, an enactment of Henry II. on the working of cloth being assigned to the year 1155. Before being offered for sale in those days all kinds of cloth had to receive the seal of an official known as an alnager, whose fee was fixed by statute. Since Elizabethan days Nottingham has been the home of nearly every important invention relating to lace and hosiery. The first stocking frame is attributed to the Rev. William Lee, who in 1589, so the story goes, was paying his addresses to a lady who showed her indifference—or contempt-by clicking her knitting-needles loudly whenever he was speaking; he therefore, in the interests of future wooers, invented the machine. The invention was not welcomed in this country, and Lee died in poverty abroad, but his brother took up the work and the method spread. Hosiery factories are a recent development; for more than two centuries the industry was carried on in the homes of the workers. The well-known Luddite riots, which began in 1811, had as their avowed cause the fear that improved machinery would lessen employment, and were productive of wild scenes of destruction. Ancient lace-machines of technical importance are on view in the Castle Museum.

Other early industries can only be touched upon briefly and promiscuously. Mention has already been made of coal. It must be remembered that for some centuries coal had a formidable rival in charcoal, and that Nottingham coal could not, owing to transport problems, compete successfully in London with Newcastle coal. Local ironwork has been commemorated in the doggerel couplet—

The little smith of Nottingham Who doth the work that no man can;

and, indeed, excellent specimens from Nottingham workshops are still preserved. Bell-founding has also been an important—and, for some reason, a litigious—local industry. Brewing was favoured by natural circumstances, rendering the ales of the district famous through many generations. Tanning was carried on as far back as the thirteenth or carly fourteenth century, and during an outbreak of plague in the reign of Charles II. the part of the town in which the tanners' quarter was situated was said to have escaped more lightly than the others. Partaking of the nature of art as well as of trade are other industries that merit mention—carving in alabaster and the manufacture of pottery and glass. Nottingham alabaster work has long had a wide reputation, and has even found its way to the Continent. The manufacture of pottery went on for several hundred years, with a lapse, apparently, between the sixteenth and eighteenth centuries, but has now ceased. The Castle Museum contains some beautiful specimens. The name "Glasshouse Street" and a few examples of ware are all that remain of the glass-making industry.

Although we are concerned with Nottingham as distinguished from Nottinghamshire, we must not omit to mention, in this connection, the reputation once held by the liquorice of the county. "In the West neere Worksop groweth plenty of Liquorice very delicious and good," wrote Speed in "The Theatre of the Empire of Great Britaine"; and Thomas Fuller, in his "Worthies" (1662), is more explicit when discussing "Glycyrize or Liquoris":

England affordeth hereof the best in the world for some uses, this County the first and best in England: Great the use thereof in Physick, it being found very pectoral and soveraign for several diseases. A stick hereof is commonly the spoon prescribed to Patients, to use in any Lingenees or Loaches: If (as *Eneas* his men were forced to eat their own Trenchers) these chance to eat their Spoons, their danger is none at all.

Even earlier, as appears from a passage in Camden's "Britannia" (1586), the industry was a flourishing one. In the eighteenth century bundles of the root were taken

to markets in surrounding towns; but cultivation on a commercial scale was discontinued about 1770.

Nottingham is associated with two old proprietaries, both of which, like "Charley's Aunt," are still running. The following advertisement from the London "Post Boy" of January 1, 1707-08, speaks for itself:

Daffye's famous Elixir Salutis, prepared by Catherine Daffye, daughter of Mr. Thomas Daffye, late rector of Redmile in the vale of Belvoir. . . The original receipt is now in my possession left to me by my father. My own brother, Mr. Daniel Daffye, apothecary in Nottingham, made this Elixir from the same receipt, and sold it there during his life. . . .

The early popularity of the Elixir was evidenced by the fact that the official tinctura sennæ composita of those days was believed to be an imitation of it.

Abbey's Salt, now an American proprietary, originated in Clumber Street, Nottingham, where Mr. Abbey had a shop. He introduced the saline under the name of Abbey's Potash, and made early use of a testimonial from the lady whose name and features were printed on the wrapper. The proprietary was purchased from Mr. Abbey by a Mr. Cox, and years ago it was obtainable over the counter in threepenny sample packets. Eventually it passed across the Atlantic.

Nottingham Worthies

At the corner of Parliament Street and Newcastle Street, Mr. E. L. Guilford tells us, stood a chemist's shop kept, in the early part of his married life, by William Howitt. "Business," remarks the "Dictionary of National Biography," with unconscious cruelty, "did not interrupt his literary work." Like his gifted wife, Howitt was a member of the Society of Friends; and we may be certain that he would make a point of rendering unto Cæsar the things that were Cæsar's. Those of our readers who have passed middle life (and possibly others) have, no doubt, a clear recollection of the vogue that William and Mary Howitt had, in what were then described as home circles, forty or more years ago. From an interesting description of the Howitts by Dr. Spencer T. Hill in "Lives of Nottinghamshire Worthies" we take the following passage:

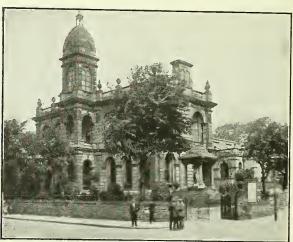
William, whose name is so well known wherever the English language is spoken, was intended to be an architect. Imbued with the ideas of Rousseau, his father considered that every man should possess a handicraft as well as a profession; to which end he placed William with a carpenter at Mansfield, where in a short time he became a clever cabinetmaker, several beautiful specimens of his skill being possessed by his family. Having no taste for architecture—to be founded upon carpentry—but for medicine, he became a chemist at Nottingham, inheriting strongly his mother's taste for healing... William wore a closefitting black Quaker coat without collar. . . Mary, William's wife, was neatly, genteelly dressed, but with nothing prim or sectarian in her style.

The business was removed from Newcastle Street many

The business was removed from Newcastle Street many years afterwards, on the demolition of property to make room for railway extensions, to Milton Street. Howitt was at one time an alderman, and among well-known visitors to his house on the South Parade were Wordsworth, Montgomery, and Philip James Bailey. The Howitts left Nottingham in 1836.

It may be convenient to group next in order four men of literary fame who have little or nothing in common except their connection with Nottingham. We have seen, in the section devoted to Nottingham Castle, that Princess Anne took refuge there when her father, James II., was nearing the end of his uncomfortable tenure of the throne. Her arrival was honoured by an escort sent out from Nottingham to greet her; and among the party was Colley Cibber, then still in his 'teens. Cibber's hopes of army preferment were frustrated, and his talent was deflected to drama. Next in order comes Byron, whose association with Nottingham was not an entirely happy one. In order to remedy a slight lameness, his mother took him, when he was about twelve years of age, to a man named Lavender, who professed to cure such cases. Byron's was apparently congenital, but one foot was rubbed and "screwed up in a wooden machine," with

very painful effect. Two houses, one in Pelham Street and the other in St. James's Street, have been identified as having been occupied by the poet at various times. A remarkable manifestation of popular interest took place when Byron's body remained for a night at Nottingham on its way to Hucknall Torkard, a neighbouring town, for interment. The poetical accomplishment of Henry Kirke White, who died in 1806 at the age of twenty-one, is more remarkable, perhaps, in the promise that it gave than in enduring value; but the pathetic circumstances of his struggle against adversity render him a deeply interesting figure. In addition to his birthplace, the city possesses a street named after him. Philip James Bailey, the author of "Festus," died in the Ropewalk so recently as



THE SCHOOL OF ART

1902, at the age of eighty-six, and is, of course, remembered by many of his fellow-citizens. It is sufficient, with regard to "Festus," to quote the remark of Tennyson that "there are really very grand things in 'Festus."

Brief mention must also be made of Archbishop Sterne, the great-grandfather of Laurence Sterne; Paul and Thomas Sandby, the artists; R. P. Bonington, the painter, who, together with the Sandbys, is represented in the Castle Museum; Gilbert Wakefield, the theologian; Dr. Marshall Hall, a famous consultant and an original worker in medicine; and E. J. Lowe, the botanist and meteorologist. Nottingham is fortunate in its roll of honour.

University College

The foundation-stone of University College, in which some of the meetings of the Conference are to be held, was laid on September 27, 1877. The College was opened on June 30, 1881, by His Royal Highness the Duke of Albany, and the first session began on October 1 of the same year. All provision for the higher education of adults was gathered into the College, and facilities for day and evening studies were afforded to all without distinction. The College was affiliated in 1893 to the Universities of Oxford and Cambridge. It was governed by a committee of the City Council until 1903, when a Royal charter of incorporation was granted vesting the College in a court of governors consisting of the City Council, with a President and Vice-President elected by them.

Since 1893 many extensions to the building have been carried out, including a new physical wing in 1921 and new chemical and botanical laboratories in 1920, the former being specially adapted for students in the department of pharmacy. In 1920 the department of hosiery was reorganised, and in 1921 the department of textiles was opened, provision being made for instruction in dyeing and yarn-testing, in addition to hosiery. In 1919 a department of pharmacy was founded, which prepares students for the Major and Qualifying examinations of the Pharmaceutical Society.



UNIVERSITY COLLEGE

The College prepares for degrees of the University of London and for diplomas in various subjects. It is divided into four Faculties—the Faculty of Arts, including the departments of English, history, classics and philosophy, modern languages, education, extra-mural education, and music; the Faculty of Economics and Commerce, including the departments of law and social study; the Faculty of Pure Science, including the departments of chemistry, physics, mathematics, biology, geology, geography, military science, and metrology; and the Faculty of Applied Science, including the departments of engineering, technology, and mining. There are four halls of residence connected with the College—Mapperley Hall and Waverley House for men, Cavendish House and Hollygirt for women.



PHARMACY LABORATORY
AT UNIVERSITY COLLEGE

During the session 1920-21 there were 831 men and 180 women day students, of whom 791 were following courses leading to a degree or diploma, while 108 were attending lectures of equal standard. Twenty-four day students were engaged in research and post-graduate work. There were 1,874 evening students; and, of these, ten were graduates taking further courses of instruction, thirty-one were reading for degrees, sixty-eight for various professional qualifications, and sixty were reading for the London matriculation. The pharmacy department was attended by 128 full-time day students and fifty part-time evening students. This department is under the control of a special advisory committee

appointed by the Council of the College. The FitzHugh Memorial Prize, which was founded in 1919 in honour of Richard FitzHugh, late President of the Nottingham Pharmaceutical Association, and formerly vice-chairman of the College Council, is awarded each year to the pharmaceutical student who has given greatest satisfaction in attendance, study, and examination.

The social side of the College is in the hands of the students' "Union," which has the control of all clubs and associations. The tennis ground, having ten courts, is situated in Elm Avenue, and the athletic ground at West Bridgford, where provision is made for cricket, hockey, and football (Rugby and Association). The Golf Club is attached to the Corporation links at Bulwell. The College magazine is published by the "Union."

Negotiations are in progress to provide a university for the East Midlands. The education authorities in Derbyshire, Leicestershire, Northamptonshire, Lincolnshire, Butland, and

tonshire, Lincolnshire, Rutland, and Notts are combining in this joint scheme. Thanks to the generosity of Sir Jesse Boot, Bt., who has given a site and no less a sum than £160,000, new buildings will shortly be erected on the Highfield estate. The foundation-stone of the new buildings, which are to be of Portland stone, was laid by Viscount Haldane on June 14 (C. & D., June 17, p. 38).

Nottingham Pharmacists' Association

The Nottingham Pharmacists' Association was one of several chemists' societies that came into being just after the passing of the Pharmacy Act in 1868. It was founded at a supper held in December of that year, and the



CHEMICAL LABORATORY
AT UNIVERSITY COLLEGE

inaugural meeting took place on February 12, 1869, the title first adopted being "The Nottingham and Nottinghamshire Chemists' Association." Mr. J. H. Atherton, F.C.S., was elected President, and Mr. R. FitzHugh, Ph.C., F.C.S., secretary. The scientific education of assistants was a strong feature of the Association's activities from the first, and was continued for many years: in the session 1870-71, for example, thirty lectures were given on chemistry, and twenty-six on pharmacy and materia medica. A museum was formed about this time, and Messrs. FitzHugh, Parker, White, Mayfield, and Jenkins undertook to supply specimens. The annual reports, summarised year by year in The Chemist and

Druggist, show that the Association has continually been in the fortunate position of having a balance in hand: on one occasion it was reported that there was not a single subscription outstanding, and so long ago as 1833 a discussion took place as to the best way of using the balance. In 1897 the annual subscription was lowered—another indication of prosperity. The famous case of the Society of Apothecaries v. Shepperley is outlined in the next section; but it should be mentioned that the Association took a deep interest in the defence, and contributed generously to the funds of the Chemists' and Druggists' Trade Association, which had the matter in hand. The title of the Association was changed in 1905 to "The Nottingham and Notts Pharmaceutical Association," and in 1914 to "The Nottingham Pharmaceutical Association." It is probably unique among chemists' associations in having had the same President for more than forty years: the memorial badge presented to the Association this year by the daughters of the late Mr. FitzHugh bore an inscription setting forth that he had been President from 1876 to 1918. On his death, Mr. A. E. Beilby filled the chair until the annual mecting in 1920, when Mr. G. F. Godson followed. Mr F. Ross Sergeant was elected President last year.

The Shepperley Case

Scction 28 of the Apothecaries Act, 1815, provides that the business of a chemist and druggist shall not be prethe business of a chemist and druggist shall not be prejudiced nor in any way affected "in the buying, preparing, compounding, dispensing, and vending drugs and medicinal compounds, wholesale and retail." During the negotiations between representatives of the apothecaries and of the chemists and druggists which preceded the final drafting of the Act, the words just quoted were omitted from the version suggested on the apothecaries' side; and it is obvious that the chemists and druggists would have had a more effectual protection without the limiting clause that their spokesmen added. From time to time the Society of Apothecaries has brought actions designed to abolish what is loosely referred to as counter prescribing—actions in which Section 28 of the Act has proved a crucial factor. The most important of these began in the Nottingham County Court on March 13, 1877, when Mr. George Shepperley, Ph.C., Long Row, was sued by the Society, under Section 20 of the Act, for having acted as an apothecary. The chief witness for the prosecution was an informer named Thomas Jolly Death, whose name afforded an opportunity for judicial humour too obvious to be missed. Allowing certain discrepancies between his evidence and Mr. Shepperley's, the facts elicited were, broadly, that he entered the pharmacy and complained of a sore throat, opened his mouth for inspection, was given a bottle of saline mixture, and was charged a shilling. Mr. Shepperley was fined £20 by the County Court judge, and the Chemists' and Druggists' Trade Association, which was determined to vindicate the rights of pharmacists, appealed. The Court of Exchequer, consisting of the Lord Chief Baron (Sir Fitzroy Kelly) and Mr. Baron Cleasby, ordered that the case be retried in the higher court. It came before Mr. Baron Pollock on November 7, 1878, Mr. Day, Q.C., leading for the Society of Apothecaries and Sir Henry James, Q.C., for Mr. Shepperley. Three chemists and druggists, aged respectively eighty, eightyfive, and eighty-three, were called to show what the custom was in 1815 with regard to giving advice over the counter, and the judge, in summing up, left it to the jury to say whether the defendant had gone outside his province. Mr. Shepperley won. A few weeks later Mr. Day moved in the same court for a new trial, on the grounds that the verdict was against the weight of evidence and that the judge had misdirected the jury. The motion was refused, the Lord Chief Baron making some pointed observations on the difficulty of refusing advice in cir-cumstances like those disclosed. The Society of Apothecarics threatened to appeal, but soon afterwards let it be known that the case was abandoned. Mr. Shepperley passed away in 1916 at the venerable age of eighty-four.

Nottingham Chemists and Pharmacies

Bass and Wilford, Ltd., Parliament Street
There is no longer a Mr. Bass nor a Mr. Wilford, and
the business is now a private limited company, the
shares of which are chiefly owned by the Wilford family.
The managing director is Mr. Kirk. This business
occupies one of the finest positions in Nottingham, in
the centre of the best shopping district. Till a year
ago the shop stood at 52 Milton Street, and the change
of position has been a considerable gain. The business
is an old one. It was cstablished over a hundred years
ago—to be precise, in 1820. The original owner was a
Mr. Chater. He was succeeded by Mr. Bass, who later
took Mr. Wilford into partnership. On the demise of
Mr. Bass a quarter of a century ago, Mr. Wilford became
the sole owner, the title remaining as hitherto. On the
death of Mr. Wilford a few years later, a limited company was formed as already explained. The character
of the business may be described as high-class dispensing
and light retail, a considerable trade being done in
toilet-articles of all sorts. This shop holds the sole agency
for Nottingham for the preparations of Morny Frères.

MR. J. BEACHELL, PH.C., MARKET STREET

Mr. Beachell's pharmacy occupies a commanding position in the fashionable shopping centre. It was founded in the year 1870 by the late Mr. J. Pearson, who was succeeded fifteen years later by Mr. T. M. Spencer, from whom Mr. Beachell took over the business in 1901. Mr. Pearson had several assistants who subsequently won considerable success in their calling—notably Mr. E. S. Waring, now a director of Boots, Ltd., and the late Mr. F. A. Rogers, London, the manufacturer of Rogers' sprays, and for some years a member of the Pharmaceutical Society's Council. Mr. Beachell carries on a large dispensing business, and has a considerable connection in toilet-articles; he also does a brisk photographic trade. He is the pharmacist-member of the Rotary Club of Nottingham—a much-coveted distinction. His interests are by no means confined to pharmacy. He is a keen motorist and handles a car as few men do. He also takes a deep interest in music, and rejoices in the possession of a family who are accomplished musicians. Mr. Beachell is full of cordiality and enthusiasm, and is by nature a distinct optimist. Finally, he finds much to do as secretary of the Conference hotel committee.

MR. A. E. BEILBY, ILKESTON ROAD

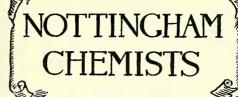
Mr. Beilby himself founded this business in 1880, not at the present address, but in smaller premises directly opposite. The commodious shop he occupies to-day he removed to in 1915. He is in the midst of a busy industrial neighbourhood, and the activities of the district are reflected in the business. A large dispensing and counter trade is done, together with much Insurance dispensing. There is a post-office attached. Mr. Beilby is himself a remarkable man. First, he is an authority upon mediæval church architecture, and upon this subject he constantly lectures in many places in the Midlands and in the North. Then, he has an intimate knowledge of, and takes a vital interest in, the drama, especially (but by no means solely) in modern English drama. He is chairman of the local branch of what is called "The Little Movement"—an organisation of American origin, the object of which is to foster the higher interests of the drama. In this capacity he has made the acquaintance of many famous people, notably of Mr. G. Bernard Shaw. He is chairman of the Swedenborgian Church Committee, and is a lay preacher on behalf of that Church. Withal, he is a true lover of letters, and possesses a fine library.

Mr. J. Boyle, King's Walk

Till recently Mr. Boyle was manager for Bass & Wilford. King's Walk is close to Parliament Street, in which Mr. Boyle started in business; he removed to his present more convenient premises in 1912. Mr. Boyle loves the scientific side of his calling, and has worked up a large dispensing connection. He does no work



MR. E. C. CARR



MR. G. F. GODSON



MR. A. E. BEILBY



MR. F. R. SERGEANT



MR. S. H. PLATTIN



MR. J. T. ROBSON



Mr. S. Cook, J.P.



MR. J. BEACHELL



MR. W. GILL



MR. L. M. TOMPKIN



MR. D. ELLIS





MR. G. J. R. PARKES



MR. G. E. HAR

[1922]

under the Insurance Act. His attitude towards pharmacy is well seen in the fact that he stocks few "patents," though he packs some smart lines of his own.

MR. H. BROWN, MANSFIELD ROAD

Mansfield Road is a busy thoroughfare, and Mr. Brown's pharmacy is situated in its busiest part. The business was founded in the year 1870 by the late Mr. John Widdowson, from whom Mr. Brown purchased it in 1890. A large dispensing and counter trade is done, but no Insurance dispensing. Optical work upon a considerable scale is also undertaken. Mr. Brown is one of those pharmacists who refuse to allow pharmacy to fill the whole landscape. Thus he is, and has been for the greater part of his lifetime a chorister. At the present time he is among the basses of the choir of Trinity Church, and by a happy arrangement his assistant, Mr. Pratt, is also a chorister in the same choir! Mr. Brown has other hobbies, notably that of sport—fishing in particular being, as he says, one of his weaknesses.

J. CHAMBERS, ALFRETON ROAD

This business, situated in an industrial neighbourhood, is owned by Mr. J. Chambers and his brother, Mr. W. Chambers, in partnership. The pharmacy is the result of a fusion of two distinct businesses, that of the late Mr. W. Burton and that of the late Mr. J. Wildgoose. These faced each other on opposite sides of the street, and the present address used to be that of Mr. Burton.

MR. J. W. P. CHAMBERS, WEST BRIDGPORT

West Bridgport is a residential neighbourhood, and the character of all the pharmacies therein can roughly and readily be inferred from this statement. Mr. J. W. P. Chambers's pharmacy, for example, is typical of what pharmacies in such districts usually are. It is a well-fitted, handsome shop, doing a thriving dispensing business and a good-class counter trade, especially in toiletarticles. There is also a large sale of Ucal preparations. Mr. Chambers dispenses under the Insurance Act. Turning to personal details, it is to be said that he is a strong and enthusiastic Freemason, and has held many offices in that body. Sport appeals to him, and games—especially bowls, of which he is a skilled exponent.

MR. WILLIAM J. CLAY, CARLTON STREET

This pharmacy lies very near what may fairly be called the centre of Nottingham, and carries on a brisk business of a varied sort. A good deal of dispensing is done, both for "private" customers and for Insurance patients. The shop is of attractive appearance and is well fitted. It was founded as long ago as 1865 by the late Mr. C. A. Bolton, and was taken over by the present proprietor in 1914. To Mr. Clay's other business activities must be added his responsibility for the dispensing of medicines at the local Women's Hospital. It may also be said that Mr. Clay received his pharmaceutical education at Muter's, qualifying in 1898. He is the energetic secretary of the Conference entertainment committee, and is full of enthusiasm.

MR. S. COOK, RADFORD ROAD AND DENMAN STREET

Mr. Cook is an ex-alderman of the Nottingham City Council and a justice of the peace for the borough. In 1905 he was the Sheriff of Nottingham. This is a proud and distinguished record, not easy to match within the city and impossible to beat. Nor has ex-Alderman Cook ever sacrificed business duties to civic; to each he has devoted a due share of his time and energies. He possesses two brisk and flourishing pharmacies, both of them in busy parts of the town. The Radford Road pharmacy he founded in the year 1881, and that in Denman Street in 1884. Unfortunately, ex-Alderman Cook has been in failing health for some time and is now recuperating at Bournemouth. His friends everywhere will wish him a speedy and permanent recovery. Mr. Cook's business affairs are in the hands of his nephew, Mr. H. Renshaw Clarke. Both pharmacies are excellently fitted and well stocked, and a visit to either leaves little doubt as to the

volume of the trade which is carried on. A few further particulars of Mr. Cook's activities may be added. He was the first chairman of the local Insurance Committee; he has been a guardian of the poor; he has been chairman of the Nottingham Health Committee, and a member for many years of the council of the Nottingham Pharmacists' Association.

MR. F. C. COATES, RAWSON STREET

This pharmacy is situated in a busy industrial district, and does a brisk counter business, as well as a good deal of Insurance dispensing. It is well stocked; the stock seems admirably arranged, and the internal details are well and thoughtfully planned. Mr. Coates is dispenser to the local Board of Guardians, and is in one way or another a very busy man.

Cragg & Shepherd, Arkwright Street (112 and 214), Mansfield Road, and Beeston

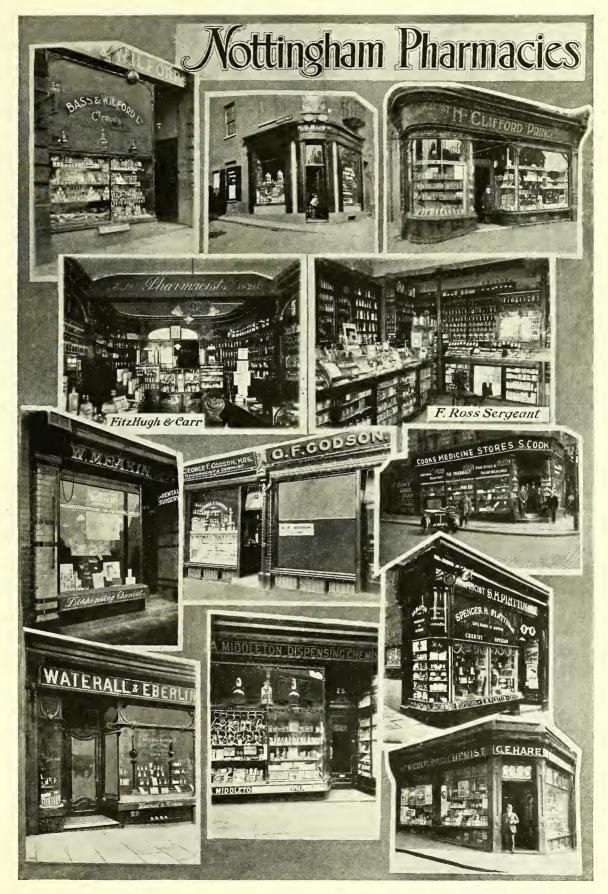
The four branches of this prosperous business are now in the sole proprietorship of Mr. William Cragg. Till 1916 Mr. Shepherd was an active partner. Recently the fourth branch, at Beeston (a village five miles out of Nottingham), was opened, while a short time previously a branch in Woodboro' Road was closed down. Each of the pharmacies may claim to be old-established, and each was in a flourishing condition before being taken over by Messrs. Cragg & Shepherd. All are alike in being Rexall Pharmacies; few pharmacies, indeed, in the Midlands, if any, have so large a turnover in Rexall goods. Although, naturally, the character of the trade done in the various branches is to some extent dissimilar, it is alike also in that it includes, in every case, Insurance dispensing, a considerable sale of toilet-articles and of smartly packed proprietaries, and the holding of agencies in addition to that of Rexall.

MR. E. Dales, Ph.C., BEECH AVENUE

Beech Avenue is in a semi-residential quarter, and Mr. Dales's place of business supplies the physic needed in a wide area. The chief activity carried on is dispensing, and this is divided about equally into that done for customers who pay and that comprised in the Insurance scheme. The pharmacy is well stocked and fitted, and a large variety of goods is "carried." Mr. Dales is a Ucal agent. The fact that he is a "Major" man, and that, moreover, he passed Minor and Major in the same year—1894—testifies to his keenness as a student and is good evidence of his claim to be interested in the scientific aspects of pharmacy. At one time this business was a branch of Mr. Cook's pharmacies (q.v.); Mr. Dales took it over in 1898. Mr. Dales is by no means inactive out of business hours, and he believes that a change of occupation is as good as, or better than, a rest. Thus a large part of his spare time is devoted to the Wesleyan Methodist Church, for which body he is an eloquent local preacher in considerable request. It may interest readers to learn that Mr. Dales studied at Wills's College of Pharmacy.

MR. D. ELLIS, LOSCOE ROAD, CARRINGTON

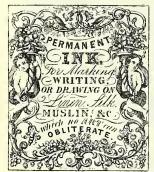
An excellent business is done in this pharmacy, which lies in a residential neighbourhood—perhaps one ought to say, in a suburb. Insurance dispensing is done, along with general dispensing and the sale of a great variety of goods, notably packed proprietaries and toilet-articles. The business was established more than fifty years ago. Mr. Ellis came here in 1891, succeeding the late Mr. G. H. Bell. He was educated at the Westminster College of Pharmacy, and before settling in Nottingham he occupied a number of posts in various parts of England, notably in Loughborough, Dawlish, and Penmaenmawr. Mr Eilis hails from the delightful little town of Ellesmere, in Salop, and he carries with him, wherever he goes, inspiration from that lovely wooded and watered spot. No wonder that his interests, outside pharmacy, are of the open-air sort. He loves golf, gardening, chickenfarming, fruit-growing, etc. He is a good Churchman, and has held several offices in the Church of England. In the year 1908 he was Vice-President of the Nottingham Pharmacists' Association.



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FITZHUGH & CARR, LONG ROW

There is nothing invidious in saying that this is the premier pharmacy of Nottingham. Situated in the midst of the "best" shopping part, it is a beautiful and dignified pharmacy of the most attractive sort. Façade and interior are alike handsome, and the windows are so fitted as to display goods to the best possible advantage. It is a typically English pharmacy, in which no attempt is made to imitate what is American or vulgar-modern. The proprietor is none other than the admirable and energetic Mr. E. C. Carr, the local Conference secretary. The firm was founded in 1820 by a couple of chemists named respectively Brothers and Williams. Brothers went out; Williams, doubtlessly feeling lonely, took to himself a second partner, and the firm's title became Williams & FitzHugh. Then Williams made his exit, and FitzHugh became sole owner—but only for a time; for in 1903 he found a second partner in Mr. C. F. Carr, and ever since the firm has been known as FitzHugh & Carr. In 1904 Mr. C. F. Carr became sole owner. Mr. Carr served his country in the Great War, and paid the supreme forfeit. Laying down his life in 1917, his place was taken in the business by his brother, Mr. E. C. Carr.





EXAMPLE OF LABELS FORMERLY IN USE

It is worthy of remark that Mr. Richard FitzHugh was the chairman of the local Committee when the British Pharmaceutical Conference met at Nottingham in 1893, the late Mr. Octavius Corder being President. Mr. Carr is not only the local secretary, but also the secretary of the Nottingham Pharmacists' Association. His chief hobby, as he often says, is pharmaceutical organisation. He is certainly to be reckoned among the smartest and most energetic secretaries to be found in pharmaceutical circles in England. His work on behalf of the Conference is acknowledged with gratitude, not only in Nottingham, but in London, too; and it is expected that, largely through the work of Mr. Carr, something like a record meeting will be held in July. Mr. Carr is proud of his old school—the Wakefield Grammar School—at which he had an enviable record; and he is proud, too, of his pharmacy college at Manchester. He has a wonderful gift for organisation, considerable savoir faire, much talent in composing differences, and withal vast energy and enthusiasm.

MR. W. GILL, RADFORD ROAD

This is yet another pharmacy situated in a busy quarter, and it can be said without exaggeration that there are few idle moments during the working day. The business was founded in 1882 by Mr. J. Robinson, from whom Mr. Gill bought it in 1883. Across the road was a pharmacy more than 150 years old, owned by a Mr. Pride. This Mr. Gill bought in 1890, and amalgamated it with the pharmacy he already possessed. He was educated at Nottingham University College, and has never ceased to benefit from the atmosphere of culture which surrounded him in his student days. He qualified in 1883. Mr. Gill does a large retail and dispensing business, and also much Lisurance dispensing. He sells a variety of Ucal preparations, and does a considerable optical business. Mr. Gill was secretary of the Nottingham Pharmacists' Association

from 1900 till 1913, and has been for a still longer period a member of the Council of the Association. He was assistant local secretary to the Conference when it met at Nottingham in 1893. As to hobbies, Mr. Gill is deeply interested in literature and in science. He is a prominent Congregationalist and a useful Church-worker. His chief non-pharmaceutical interest, perhaps, is what is called the Adult School—i.e., a "school" for grown-ups, in which the teaching takes the form of lectures or addresses every Sunday afternoon upon all sorts of subjects connected with science, literature, history, philosophy, and so forth. The audience, or school, is encouraged to put questions to the chief speaker and to join in a discussion of the various points raised.

MR. G. F. GODSON, OLD BASFORD

Mr. Godson is joint treasurer, with Mr. H. P. Middleton, of local Conference funds, and chairman of the entertainment committee. He took over the present business in 1912. His pharmacy is situated in the middle of an industrial neighbourhood, and a very busy pharmacy it is. Much Insurance dispensing is done, as also a large mixed counter trade. Mr. Godson is a prominent and enthusiastic Freemason, being senior Warden of the Edwinstowe Lodge. Outside Masonry and pharmacy his interest is chiefly in sport and games, bowls being a favourite pastime of his. Mr. Godson is full of energy and amiability, and is very popular with his colleagues.

MR. G. E. HARE, HOLLOW STONE

There used to be a branch of this business in the Cattle Market, London Road, but this is now used solely as an office. Mr. Hare is perhaps the oldest member of the local Association—the "father" of that body, as we say. His pharmacy has quite an interesting history. It began in the year 1798 at the London Road premises, the founder being Edward Cox. He was succeeded by Frank White, whom Mr. Hare succeeded in 1890. A mixed trade is done here—retail, dispensing, proprietaries, as well as oils, paints, and agricultural necessaries. Mr. Hare is an excellent example of the man who does not allow his life to be circumscribed by his calling. He is a guardian of the poor for the parish of St. Mary. He was a special constable for the four years of the war. But his chief activity outside business is the collecting of rare china, prints, and antique furniture. Of these, and especially of old china, he has a collection which may fairly be called magnificent. Mr. Hare is deservedly popular; his frankness and his transparent and unfailing probity make him one of the most esteemed members of the Nottingham craft.

MR. W. T. N. JEWSON, ILKESTON ROAD

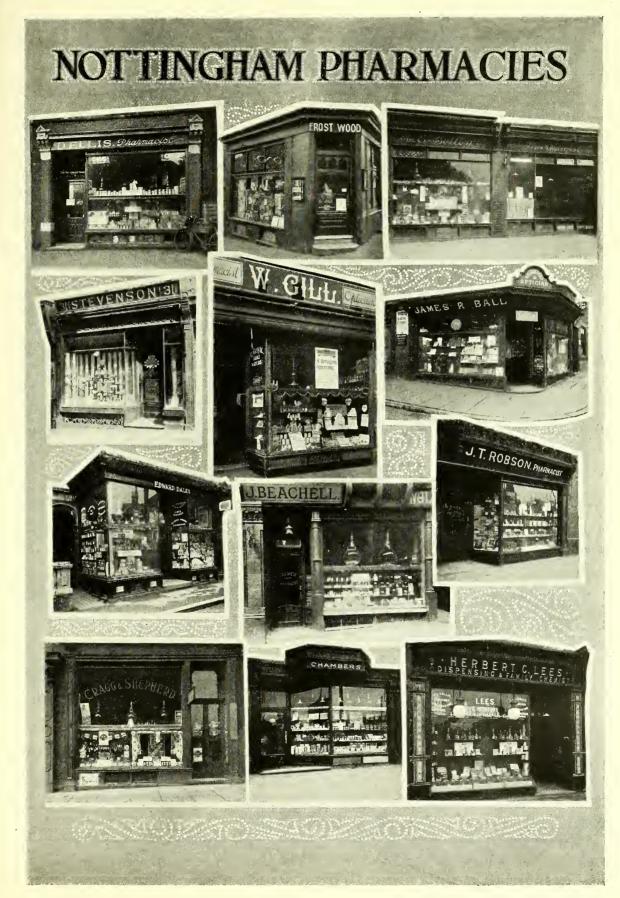
Here, again, is a pharmacy in a busy industrial neighbourhood. A large volume of Insurance dispensing is done, together with a considerable retail trade. The business was founded in 1897 by Mr. J. Robinson, from whom Mr. Jewson acquired it in 1904. He is a keen and skilful photographer, and turns out the prettiest and most attractive coloured photographs. Great credit is due to Mr. Jewson for his artistry, especially as he is a busy man in more prosaic directions.

MR. H. C. LEES, CARRINGTON MARKET

This is a fairly old-established business, and has been in existence upwards of half a century. The present proprietor took over the pharmacy from Mr. Widdowson in 1903. A mixed business is done, and the stock includes oils, paints, and agricultural goods. There is a large connection in Insurance dispensing. Unfortunately, Mr. Lees is very largely an absentee through illness, and at the present time is recuperating at a Norfolk sanatorium. A wide circle of readers will wish him a speedy restoration to complete health.

MR. W. MEAKIN, MANSFIELD ROAD

This business was formerly a branch of Mr. D. Ellis's main pharmacy (vide supra). Mr. Ellis opened it (as a branch) in 1903, and sold it to the present owner in 1905. A typical suburban trade is done: much dispensing, both of a "private" and of the Insurance sort; a considerable



general trade; with quite a large sale of toilet and similar articles. This is a Ucal pharmacy, and it is to be added that Mr. Meakin is an enthusiastic Ucalite; indeed, he is an enthusiast in everything he takes up. But his most important and interesting side-line is dentistry; upstairs Mr. Meakin has a well-fitted dental surgery in which the principal operations connected with teeth are constantly carried on. Still more interesting, Mr. Meakin may fairly claim to be the founder, or at least one of the founders, of the Chemists' Dental Society: he it was who convened the first meeting more than ten years ago. He became the Society's first secretary, while for the period 1918-1920 he was the President of the local branch of the Incorporated Dental Society. His chief hobbies are singing and golf. He is, and has been for many years, a tenor chorister at St. Andrew's Church, and in that capacity has taken part in the performance of many oratorios.

A. MIDDLETON & SON, LISTER GATE

The present proprietor is Mr. H. P. Middleton, who is the colleague of Mr. G. F. Godson (q.v.) in the joint treasurership of local Conference funds. Mr. Middleton became his father's partner in 1908 and sole owner in 1917. He was educated at Nottingham High School and at the Edinburgh School of Pharmacy, and qualified in 1903. He is a much-travelled man, and from 1905 till 1908 filled posts in such places as Geneva, Nice, and Monte Carlo. Along with his other offices, he is treasurer of the Nottingham Pharmacists' Association. Mr. Middleton is deeply interested in the scientific side of his calling, and "runs" the interesting side-lines of trusses, elastic stockings, and similar goods. Local doctors fully appreciate his skill in this direction, and send him many patients. His chief hobby is motoring, and he is never tired of exploring the beautiful country that surrounds Nottingham on all sides.

MR. G. J. R. PARKES

Although Mr. Parkes does not carry on a retail business in Nottingham, the prominent and useful part he is playing in connection with the Conference entitles him to a note in this place. He is among the most genial and considerate of men, and is greatly esteemed by his colleagues. Mr. Parkes is one of the senior representatives of The British Drug Houses, Ltd. He is extremely active in Conference work—and much of it is done quietly and unostentatiously. His skill as an organiser finds ample scope in the chairmanship of the catering committee. It ought to be added that Mr. Parkes is a prominent Mason, is Provincial Grand Deacon for Nottinghamshire, and has been instrumental in founding no fewer than four lodges.

MR. S. H. PLATTIN, DERBY ROAD

Situated in a busy quarter not far from the centre of the city, this pharmacy does a thriving dispensing and mixed retail business. It is well fitted, and the stock, which includes a good many Ucal preparations, is well arranged. Mr. Plattin is a busy man inside his pharmacy and out of it. He has been President of the Nottingham branch of the Ucal Federation, and Vice-President of the Nottingham Pharmacists' Association; he is chairman of the Conference excursion committee; he is a keen Freemason, and is Worshipful Master of the Edwinstowe Lodge of Nottingham; he is a sound Churchman, and has held office in his church; he is constantly busy with sport in various branches—golf, bowls, billiards, and so forth. As a profitable side-line he does much optical work—he is a Fellow of the Spectacle Makers' Company, and a freeman of the City of London. Finally, there is a good reason why every Conference visitor will want to peep at his shop: it was the home of Newball & Mason's. This business was, indeed, founded in 1850 by the original Newball, who presently added Mason. One day the partners agreed to buy a recipe for making extract of herbs from a market-woman customer; they made the stuff themselves; and from such slender beginnings arose the large and successful firm of Newball & Mason. They moved into larger premises, while the pharmacy was kept on till 1881, when its title changed

to Mason & Radford—Radford, however, being the sole owner. Mr. Radford was succeeded by the present proprietor in 1905. Mr. Plattin is among the most affable and popular of the pharmacists of Nottingham—and that is saying a good deal!

MR. H. C. PRINCE, WEST BRIDGPORT

Mr. Prince is a close colleague of Mr. G. J. R. Parkes in that he is the secretary of the Conference catering committee. Mr. Prince's pharmacy is situated in the principal residential suburb; it is large, handsome, and well fitted. It was established by Mr. Renshaw Clark in 1907, and came into the possession of Mr. Prince in 1916. The proprietor was assistant to Mr. F. Ross Sergeant (q.v.) for ten years. He does a high-class dispensing and retail trade. Mr. Prince is by no means idle in his leisure hours. He is a strong Freemason, and is destined to hold high office. He is also a keen golfer, and is secretary of the local branch of the National Citizens' Union.

MR. J. T. RAYSON, ALFRED STREET

This pharmacy is in the midst of a busy industrial area, and does a brisk dispensing (largely Insurance) and counter trade. Mr. Rayson has been here close upon forty years. There is a post-office attached to the pharmacy, and it is evident that the proprietor is a very busy man. He runs what is, for a pharmacist, the uncommon side-line of an insurance agency; and he is a Ucal agent.

MR. J. T. ROBSON, DERBY ROAD

This business was founded by Mr. A. E. Beilby (q.v.) as a branch, and was taken over a few years later by Mr. Robson. A good-class dispensing and retail trade is done, but Mr. Robson resolutely and courageously refuses to have any relations with the Insurance Act—so far, anyhow, as pharmacy is concerned. He qualified in 1893, and is a member of the council of the Nottingham Pharmacists' Association. Mr. Robson has a handsome little shop, and it is evident that his skill and courtesy are recognised in the neighbourhood.

MR. F. Ross Sergeant, Beastmarket Hill

Mr. Sergeant is the popular chairman of the Conference local Committee and the President of the Nottingham Pharmacists' Association. His pharmacy stands in a fine position in the midst of the shopping district. It is formed by the union of two pharmacies, one founded by T. C. Taylor in 1821 in Long Row, and the second established by William Smith in 1832 on the present site or rather, next door. Mr. Sergeant purchased the Beastmarket Hill business from the widow of William Smith in January 1890, and united with it T. C. Taylor's establishment in 1896 under one roof. The present pharmacy is large, handsome, well stocked and beautifully fitted. Dispensing department and warehouse departments are alike spacious and well-arranged. Nevertheless, Mr. Sergeant, always progressive, has determined to move to premises more commodious still in Cheapside. A high-class dispensing and retail trade is the chief feature. Mr. Sergeant has lived, and still lives, a full and active life, both in and out of pharmacy. Thus, he has been three times Vice-President of the Nottingham Pharmacists' Association. For many years he was local, and then divisional, secretary for the Pharmaceutical Society. For some time, too, he taught pharmacy at Nottingham University College. Mr. Sergeant holds high pharmaceutical ideals; he believes in manufacturing his own galenicals as far as possible; he uses freshly made infusions whenever practicable; cheap makeshifts and indolent short-cuts are to him anathema. Little wonder, therefore, that his apprentices have been so uniformly successful in after-life—most of them, indeed, passed their Minor at the first attempt. Of non-pharmaceutical Minor at the first attempt. Of non-pharmaceutical activities it ought to be mentioned that Mr. Sergeant -who, by the way, is a nephew of Mr. Fred Ross (Leith Ross)—has been a churchwarden for a long period. His tastes are essentially healthy and urge him to outdoor pursuits—cricket, for example, and gardening and horse-riding. Mr. Sergeant is courtesy itself, and with

courtesy he mingles sound judgment and sound business Nottingham is to be congratulated on its

J. SLIGHT, SNEINTON ROAD AND CARLTON ROAD

Mr. Slight is in partnership with his brother, Mr. H. Slight. The original business is that at Sneinton Road, while the branch was taken over from Mr. Bayley. This pharmacy is in a busy industrial neighbourhood, and does a thriving mixed retail trade with a good deal of Insurance dispensing.

STEVENSON & WATON, PELHAM STREET

This pharmacy is in the sole proprietorship of Mr. W. M. Waton. It is distinctly handsome, is well-stocked and well-fitted, and is situated in the best-class shopping district. It is entirely given over to homeopathy, the proprietor being by conviction a homeopathist. No other Nottingham pharmacy is thus devoted to such a specialism. Apart from the various medicines symplied a good trade is done in high-class medicines supplied, a good trade is done in high-class toilet-articles—and a very elegant show they make in window and shop. The business was founded by J. J. Stevenson in 1882; Mr. Waton entered into a partnership in 1916, and last year he became sole owner. He qualified in 1904.

MR. L. M. TOMPKIN, MANSFIELD ROAD

Mr. Tompkin is essentially a "live" man. His pharmacy is the "baby" of Nottingham. He opened it himself de novo only a year-and-a-half ago, and has already established a good connection. He was educated at Nottingham University College and qualified in 1920. Mr. Tompkin had a remarkable and enviable war record.

He was a dispenser, with N.C.O. rank, on hospital ships, chiefly on H.M.S. "Madras" (which was fitted out as a hospital ship), and in this capacity sailed round the world several times. He contracted bubonic plague—and is alive to tell the tale. Mr. Tompkin is a keen motorist and an active outdoor man generally.

WATERALL & EBERLIN, CHAPEL BAR

A successful pharmacy in a brisk neighbourhood. Mr. A. Eberlin, J.P., is now the sole proprietor. A mixed retail trade is done, along with dispensing, and optics form a profitable side-line. The shop is neatly fitted and well arranged. Mr. Eberlin's urbanity and pleasant manner is the measure of his popularity, particularly among his brother pharmacists.

MR. E. W. WHITCHURCH, GOLDSMITH STREET

This pharmacy is situated in a goodclass residential neighbourhood. It is handsome, well-fitted, and wellstocked, and it is evident that there is a considerable demand for toiletarticles. Altogether a typical highclass suburban pharmacy.

THE SHOPS OF BOOTS CASH CHEMISTS, LTD.

In January 1897, when company pharmacy was in its early youth, if not quite in its infancy, we wrote, in giving a portrait of Sir (then Mr.) Jesse Boot: "We make out that he has under his direct control close upon a hundred shops. . . . Mr. Boot's performance strikes us as an unprecedented and astonishing feat." The hundred shops have been considerably multiplied since then, and it is natural that several of the most handsome should be found in the city so closely identified with the rise and progress

of the Boots group of companies. The one illustrated here, the Pelham Street branch, has attached to it a café spaciously planned and elegantly appointed. It is hardly an exaggeration to say that Nottingham without Messrs. Boots would be like "Hamlet" with the Prince of Denmark left out.

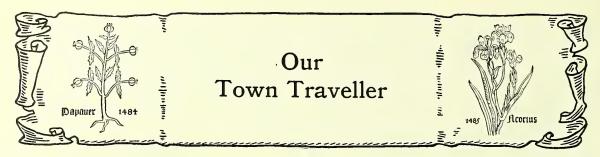
We hope to give particulars of the local manufacturing businesses in a subsequent number.



Mr. E. S. Waring, The chemist director of Boots Cash Chemists (Eastern), Ltd.



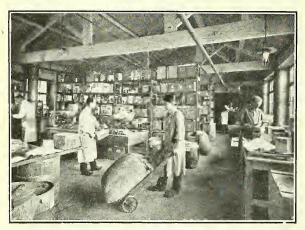
BOOTS' PELHAM STREET PHARMACY



This time, on the instructions of the Editor, I have taken as my main objectives some of the leading manufacturing houses in the provinces. Nothing is more noteworthy in the trade than the way in which, of late, several of our provincial manufacturers and wholesalers have extended their scope; and it is to a brief account of a few of these developments that this section of the C. & D.'s Special Issue is chiefly devoted.

A MODEL FACTORY

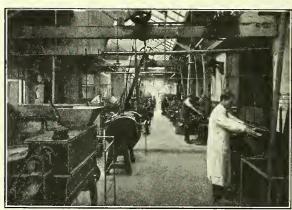
Ex-Service men who chanced to spend a few hours in the "rest camp" at Boulogne will have some idea of the climb from Leeds to Rawdon. Fortunately the comparison ends there, as the works of W. B. Cartwright & Co., Ltd., my objective on the occasion of my visit to the village, present a more holiday-like and peaceful aspect. The company moved out from Leeds in 1912, but since that date several extensions of their premises have been made and plans are now in hand for others. The general impressions I gathered during a tour of the works



DRUG-STOCK ROOM

were their cleanliness, the high class of employee, the efficient arrangement, and the variety of up-to-date automatic and semi-automatic machinery employed, including the new granulating machine made by S. W. Wilkinson & Co. (C. & D., February 4, p. 142) and the sanitape packing machine (C. & D., April 8, p. 454). Apart from these, Mr. Rennie, the managing director, who has just returned from Canada and the United States, has purchased other machinery there of a type which, he says, has not yet been seen in this country. The art room, where labels, showcards, and posters are designed, is interesting. Printing on the premises was formerly confined to labels, but now embraces practically all the printed matter used. Mr. Lambert is the director responsible for these departments, and also for the advertising consultant service (Moorland Pharmacy Service), a branch of the business appreciated by the chemist. The offices, which are under the care of Mr. Burrell, who is also a director, are as efficient in all matters relating to accountancy as the factory is in making tablets. Most

manufacturers nowadays have costing and other systems to obtain all manner of details regarding their own business, but the intelligence department of Messrs. Cartwright



A MACHINE ROOM

goes still further, as it has all kinds of particulars relating to their transactions with chemists. The advantages are legion. By this means the company can circularise every chemist in business in the British Isles, but the sending out of unwanted literature is also avoided. Again, at a moment's notice the turnover of one or more of the company's preparations by any particular pharmacist can be investigated. After visiting the several rooms engaged in the manufacture of tablets, and having the various systems of checking and cross-checking to avoid errors explained, I was taken through the laboratory, where raw material is tested and finished products examined, the pastille, packing departments and stores, the last being a model of its kind. Next was a look into the powerhouse. Electricity for both power and lighting is



PACKING AND FINISHING ROOM

generated here, and steam is supplied by a boiler which has been converted to burn oil fuel. This, Mr. Rennie told me, has proved highly satisfactory. Considerable

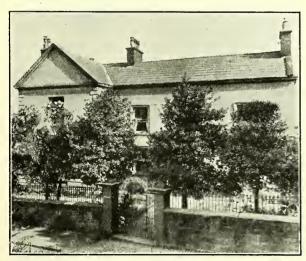
attention is given to the welfare of the company's employees, there being fine playing fields and a canteen adjoining the works.

A RAMBLE 'MID BACTERIA

Bacteriology as a fitting subject for one or other of the pharmaceutical examinations is at present very much in the air. But, whatever may be said of the science in regard to retail pharmacy, there is no doubt that some of the larger wholesale houses have been giving serious attention to its development. This I was able to judge for myself at the Research Laboratories of Evans Sons Lescher & Webb, Ltd., which are pleasantly situated at Runcorn, some miles out of Liverpool. There an extremely varied range of processes are carried through in their entirety, including the manufacture of all kinds of serums, vaccines, tuberculins, as well as calf lymph, organo-therapeutic products, etc. Pathological laboratory problems are investigated, and considerable demands in this connection come from the veterinary profession. The laboratories are under the direct supervision of Dr. H. A. Mitchell, who has a large staff of expert workers and who is a believer in the importance of the pharmacist in what might be called the triumvirate in the science of bacteriology as applied to medicine—the physician who obtains the specimen, the pharmacist who forwards it to the laboratory, and the bacteriologist who makes the report direct to the doctor. That is a business project, however, which Messrs. Evans discuss with any pharmacist who considers it worthy of investigation.

cist who considers it worthy of investigation.

My visit, unfortunately, did not coincide with any spectacular thrills such as, for example, the bleeding of the horses which has to be done at carefully regulated periods. But, in the first laboratory I visited, slides were obligingly prepared for me, and I had a glimpse of two dreaded enemies of the human race, the Bacillus tuberculosis and B. tetanus. In this room were cultures of all the most virulent types of organisms. Anaerobic varieties, such as tetanus, blackleg, the Bacillus botulinus (about which we heard a lot some time ago), can, of course, live only in the absence of air, and they thrive in an atmosphere of hydrogen. This is really where the manufacturing process begins. The preparation of diphtheria antitoxin, which is by far in greatest demand, may be taken as the standard method of preparing the antitoxic variety of serums. The culture of the



EVANS'S RESEARCH LABORATORIES

bacillus is transferred to a nutrient broth and incubated for a prescribed period at a temperature about 38° C. I entered one of the incubators, but while bacteria may revel in that temperature it is too much for the human organism, and I was glad to be out again. The broth, now containing the diphtheria toxins, is filtered from the organisms, and the guinea-pig enters the scene as a means of determining the minimum lethal

dose of the toxin. This toxin is then injected into horses at intervals in gradually increasing doses, and, when the required stage of immunisation is reached, the animals are bled. Huge glass vessels with a capacity of several litres were standing in one of the laboratories. These contained the results of the bleedings performed a few days before, and the clots were being pressed by means of glass slabs for the maximum yield of serum, just, as one might say, as the pharmacist presses his tincture marc. Guinea-



ONE OF THE CHEMICAL LABORATORIES

pigs are again used in the standardising and testing stages, and the serum is finally transferred to the hermetically sealed vials with which the pharmacist is now so familiar. That, briefly, is the method of pre-paring the antitoxic variety of serums, and although I have said nothing regarding the elaborate precautions taken to avoid contamination, these are part and parcel of the bacteriologist's work. In certain diphtheria cases high potency serum with as much as 1,000 units per c.c. (the ordinary containing about 400 units per c.c.) is of great value, as by using this concentration the practitioner can give heroic doses with a minimum of discomfort to the patient. Concentration is attained by a special process, and this necessitates an ice-making plant which I saw on the premises. Bacterial vaccines, which may be defined as counted suspensions of killed micro-organisms usually in normal saline solutions, are prepared for use against many dis-eases, and it is held that autogenous vaccines prepared from cultures of organisms obtained directly from the lesion in most cases give the best results. Clinical and bacteriological diagnoses are carried out and constitute an important part of the work at the laboratories. Research work in veterinary diseases and, indeed, any problem concerned with the outbreak of disease in animals, receives the immediate attention of the staff. The diseases of poultry—roup (avian diphtheria), for example—also come under the ægis of the bacteriologist. One of the products made on a very large scale is the Liverpool Rat Virus, which has achieved for itself a reputation as a reliable and easy means of exterminating vermin. The bait is a mixture of bread and potatoes, which is first dried in a long series of wooden trays contained in a hot-air chamber, and then mixed, cooked, and filled into tins. Thorough sterilisation follows, and each tin is then impregnated with the culture of vermin-killing organisms and incubated. From what I learned there is no danger whatever either to man or animals, though it

is a very different story so far as the vermin are concerned. Another department, equally interesting from the pharmaceutical point of view, was where the organo-therapeutic products are made. These medicaments are prepared for hypodermic or intramuscular use, as well as for administration by the mouth in the form of capsules or tablets. I was also shown some



BLEEDING A HORSE

elegant liquid pluriglandular preparations. All the products are, of course, made directly from the glands themselves. These are first minced, then desiccated in vacuum drying ovens in order to preserve their activity. Passing to the grinders, of which there is more than one type, the glands are pulverised until the resulting powder passes though a No. 80 sieve. They are then transformed into the requisite galenical preparation. Reference should be made to the physiological and chemical laboratories, in which a large amount of chemical diagnosis and analytical work is carried on, and where the preparations of the company are tested before being passed for distribution to the trade. The frog is used for testing the potency of digitalis, squill, and strophanthus. Infundibular extract is estimated by its action on the blood pressure of dogs. The manufacture of red bone marrow glycerin extract and other preparations, and the filling of ampoules, a method of medication which is growing in favour among the medical profession, are also extensively carried on. An excellent library forms part of the equipment of the laboratories, and it is worth noting that chemists who have any point of difficulty in bacteriological matters will receive all possible enlightenment from the superintendent, whose experience and knowledge are always at their disposal. On my return I passed a number of the laboratory horses browsing contentedly in a field. Dr. Mitchell, in pointing them out to me, said that they appear to thrive by being bled. On this ground it seemed to me that they are (fortunately for them) different from the poor taxpayer, but, of course, in his case it may be that he has been bled nearly white!

PHOTOGRAPHY MADE EASY

Passing on to College Lane, I called in at Thompson & Capper, Ltd., and viewed the photographic operating department. The developing and printing of photographs sounds a prosaic enough business, but my visit there proved to me that a cast-iron system is of immense importance in building a successful department from such difficult material. The amateur, curiously enough, seems to sense the difficulty in developing and printing his work,

and gets rid of it by sending his films to the chemist. If the photographic pharmacist is equally wise he follows suit, and turns it over again to someone like Thompson & Capper, Ltd., who have established the maxim that every operation, from the receipt of the spool to the despatch of the finished work, bristles with troubles, and consequently have set about removing them. The result is that everything goes with a clockwork precision and accuracy. Let me try to describe what I saw. There accuracy. Let me try to describe what I saw. There is a room where post-orders arrive in the morning. These are divided up and distributed; it is important to note that each spool, together with the order, is perforated with a number, which follows it persistently all the time the spool is in the company's hands. The developing-room shows a model arrangement. The time process is used throughout, and this necessitates a constant temperature. To that end, ice in the summer and hot water in the winter is used in the developing tanks. There are four huge vessels in this room containing developer, hypo, and washing-waters, and these are capable of dealing with 2,000 spools a day. Heated drying rooms analyse the speak to be ready for printing the ring-rooms enable the spools to be ready for printing the same day as the spools arrive. Printing proceeds at a speed which has to be seen to be believed. The printingroom is capable of turning out 10,000 prints per day, one expert operator having an individual output of 1,200. The expert operator having an individual output of 1,200. The printing operators are seated round high-power electric lights, and the exposure is measured by the steady tick of a metronome (an instrument really designed to set the pace for budding musicians). The room is bathed in a diffused yellow light, and thus the visibility remains excellent without the sensitised paper suffering. Orders for printing or developing only are despatched the same day as received; developing and printing orders go the following day. It will thus be seen that the two essentials, efficiency and speed, are not lost sight of—an go the following day. It will thus be seen that the essentials, efficiency and speed, are not lost sight of—an advantage which is appreciated by the amateur panting to get results. One item Mr. Collinson (managing directions of the state of the guarantee is given. There tor) explained was that no time guarantee is given. There is an excellent reason for this. Up to a point it is always possible to give a time guarantee. But after an exceptionally fine Bank holiday a deluge of orders may swamp the whole arrangement. As my guide said, it would be difficult to see how the system could be further speeded, for it is cally for the system who is a support of the system of the system could be further speeded, for it is cally for the system could be further speeded. is only after years of experience that it has been brought to its present high standard of efficiency. Proceeding, I saw the films from the printing frames pass to the developing operators, and from them to the fixing solutions. The prints are never still for a moment. The washing troughs, with false bottoms for facilitating the collection of the prints, are also worthy of notice. There are four



PHOTOGRAPHIC PRINTING ROOM

of these arranged in series, but while the water passes from the highest to the lowest, the prints themselves proceed in the opposite direction, the reason, of course, being that each successive bath is always weaker in hypo than the preceding one. The complaint that the prints are insufficiently washed, therefore, is not likely to come along to College Lane. The print-drier is a revolving drum with gas-heaters internally, and is capable of drying 10,000 prints a day. In the enlargement-room pictures of all sizes can be made. Post-cards and lantern-slides are turned out with equal facility, and a special note should be made of the photographic enlargement of designs for showcards that give highly pleasing results from an artistic and, no doubt, a commercial point of view as well. The whole of one large floor, and part of another, are devoted to the photographic operating department, but even this is not large enough, for I saw that orders are being sent off from still another part of the building. I was particularly impressed with the cool and airy atmospheric conditions of the various sections. The dark room is thoroughly ventilated, and lack of light is shown to be no excuse for lack of air. Every print is trimmed and examined before being sent out, and the amount of work done may be gauged from the fact that between forty and fifty persons are busy in the summer months all the time. Mr. Collinson assured me that the company place quality first and speed second, in which case, judged from the speed in every section of the process, the quality of work must reach a very high standard indeed.

THE NEW VENO PREMISES

As I entered the striking marble and tiled hall of the newer portion of the Veno Building in Chester Road, Manchester, the finishing morning touches were being applied. It was well that I had been asked to call early, for my visit occupied practically half a day—a fact which



SIR WILLIAM VENO

indicates how much there is to see in the works and offices. After a chat with the secretary of the Veno Drug Co., Ltd., Mr. H. Gregory, I began my tour under the genial guidance of Mr. J. Smith. Before long I realised that the manufacture of Veno products is practically a self-contained industry, and this impression was strengthened as the walk proceeded. Per-haps the most striking example was afforded by the laboratories, which occupy a building a little way from the block seen in an accompanying illus-

Under one roof are assembled a research laboratory, an experimental laboratory, the various manufacturing departments, and a well-equipped engineers' workshop. We found Mr. W. H. Cockton, Ph.C., the chief chemist, engaged in one of the countless routine estimations necessary to scientific control as it is understood at the present day. Mr. Cockton adds to his analytical accomplishments a positive genius for engineering, and knows exactly what each piece of machinery on the premises can do—and why. The result of this unusual combination of gifts has been a marked speeding-up in the company's manufacturing processes, and, here and there, the supersession of machinery that every manufacturer uses by machinery giving more specific results. The general method of manufacturing compressed tablets on a large scale, for example, is fairly well known; but as I walked round the tablet-making department I was struck with more than one variation—always for a good reason—of the typical modus operandi. In one machine, I learned, a powder of 200 fineness can be obtained—and no dust arises. The hot-air chambers, again, are so contrived that the highest and the lowest shelves yield exactly the same product in a given time. The ointment-making department is similarly equipped without regard to cost; the milling, mixing, and mechanical sifting apparatus (the last-named being fed by an automatic pump) is all specially chosen. The company makes its own extracts and pharmaceutical chemicals in a neighbouring section. The filling of Germolene is done in an adjoining room by means of a filler suspended on a movable rail over tables on which open tins are placed. The speed and precision of this operation are a delight to the eye. Veno's Lightning Cough Cure and Dr. Cassell's Tablets



VENO BUILDINGS

are filled in the Chester Road building, the former by rotary machines, each of which deals with eighteen gross an hour, and the latter partly by counting machines and partly by the balance method. In every case nothing is touched by hand from beginning to end of the process of manufacture. The cartoning and stamping of the tablets and of Germolene is done on the top floor. (There is provision, by the way, for the extension upwards of the new structure, admirably lighted on the latest system.)

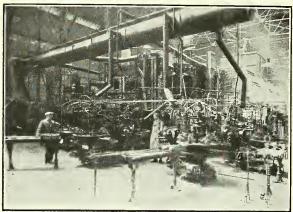
A "star turn" in the finishing of the tablets was put on for the benefit of the C. & D. representative: two girl workers with piles of cartons in the flat state and cases of the tablets unclosed converted their material into the finished product at the rate, one estimates, of several gross in a day. A turn of the wrist, and the flat carton stood ready to receive its case; another turn, and the tinfoil lay neatly folded under the added lid-and so on. And in this room, as elsewhere in the factory, work was being carried out with the purposeful energy that is one of the hall-marks of Lancashire. On the day of my visit the Cough Cure and such popular lines as Cherry Pines and health salts were not in process of manufacture, but they were well in evidence in the stock-room, which is placed close to a dock with space for three or four vans to draw up at the same time. A shoot brings goods from the upper floors down to the dispatch counter, and the section is so planned that there is little or no walking about before goods can be handled. Through the box-making section my guide and I passed into the printing department. Messrs. Veno not only print their pamphlets, labels, and so forth, but manufacture the cartons for their proprietaries. Two or three machines, each with a capacity of 5,000 an hour, deliver printed and folded cartons with uncanny precision, and, by an adjustment,



CHARACTERISTIC INTERIOR VIEW

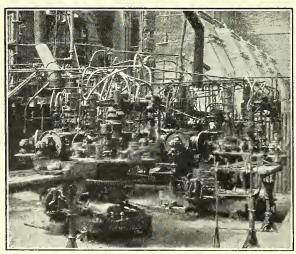
can be made to print them in three colours. Another type of machine sticks them together and passes them out pressed. Comfortably housed on one of the upper floors is the advertising department. It is, perhaps, not indiscreet to intimate that the total of the Veno Company's

advertising bills runs well into six figures annually—so much, indeed, might be postulated of a business of worldwide scope—and a table is usually to be seen heaped up with voucher copies. Some of these, in very out-of-theway languages, were singled out for the inspection of the C. & D. man, and a series of cupboards containing original



A COMPLETE BOTTLE-MAKING PLANT
(See next column)

testimonials was also raided. Each testimonial is docketed, and the case is investigated before publication is sanctioned. Not far away is the editorial office of "The Lightning Dash," the vivacious house-organ of which the motto might well be Ex luce lucellum; hereabouts, too, are the canteen and the rest-room. The clerical offices, it is hardly necessary to remark, possess adding machines and similar appurtenances of the latest type. Sir William Veno's private room is adorned with a collection of oil paintings that must be the envy of other leaders of commerce in Manchester; and in it I was fortunate enough to find Sir William himself, who added considerably to my knowledge of many of the interesting things I had just seen. Sir William, who knows business conditions in the United States au fond, remarked that the Veno Company's establishment was, he believed, the only self-contained factory of its kind either in this country or across the Atlantic, even the bottles for Lightning Cough Cure being made by a company that he had launched. Remembering Messrs. Veno's constant expansion, I was not surprised to find the governing director hinting at coming developments. And, as I had not failed to notice, everything, from the heaviest machinery to the microscopes, is of the best.



NEARER VIEW OF A MACHINE

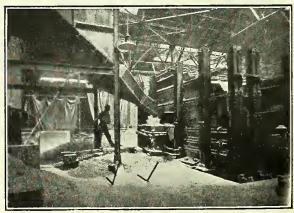
PRECISION IN GLASS-BOTTLE MANUFACTURE

Well placed among the congeries of industrial concerns that fill the Trafford Park area bordering on the Manchester Ship Canal stands the factory of the Lancashire Automatic Glass Manufacturing Co., Ltd., a company



THE MOULD SHOP

floated by Sir William Veno. Mr. D. A. Ripley, the company's works manager, greeted me, and, passing through the businesslike offices, took me straight to the part of the works where bottle-manufacture was going on. Without the aid of a diagram it is hardly possible to convey an idea of the power and precision of the bottle-making apparatus. The requisite raw material is delivered at one end of the factory, and, after the mixing of the necessary ingredients, it is raised in a hopper to the glass tank. The tank and the lehrs are heated by gas from the company's own gas producers, of which there are two. From pany's own gas producers, of which there are two. From the huge tank of molten glass two "feeders" deliver bottles (or rather red-hot "gobs" of glass) at a rate each of about fifty a minute to six automatic bottlemaking machines. Each cylinder of glass slides down a trough, is caught by a cowl-shaped deflector, and passes into a mould on the rotating table of the machine. (Some idea of the machinery may be gained from our illustrations, the photographs for which have been specially taken for this article.) The rotation of the table proceeds with a series of frequent stops, at each of which something else happens to the bottle. When it arrives at the last halting-place before the one at which it began its round, the finished product, the bottle (red-hot, of course), is lifted on to a stationary table; and when half a dozen or so have been collected they are lifted on "prongs" into the long spacious annealing chambers or lehrs, of which there are three. These "ovens" are for the purpose of tempering the red-hot bottles, or, in other words, cooling



FURNACE-MAN FEEDING MAIN SUPPLY

them gradually. Each oven contains an endless belt, revolving slowly on a drum at either end, and bottles take about ten hours to cover their journey. At the end of the lehrs, each bottle is critically examined by trained sorters under the supervision of an expert inspector, and is then passed to the dispatch department. During the week the furnaces and the machines are kept working day and night, any temporary mishap being overcome by a most ingenious combination of alternatives for continuing production. Even the best machines are, of course, not infallible; but this remarkably synchronised mechanism actually corrects its own slips, to a considerable extent, without calling for human help. In the power-house (looking very spick-and-span, as power-houses should) similar conditions obtain: not only are the engines duplicated, but, in addition, each engine has an abundance of control devices. Moulds for the manufacture of the bottles are made in the engineering shop, into which I looked before coming away: like the rest of the factory, it is commodious and well lighted. It is hardly necessary to add that, with the safeguards and precision existing, the capacity of any bottle ordered from the Lancashire Automatic Glass Manufacturing Co., Ltd., is certain to be almost mathematically exact.

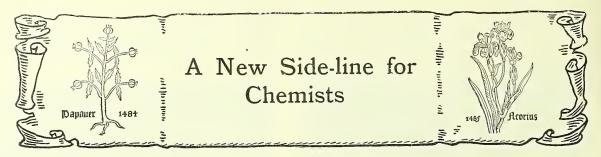
SUNDRIES AND SURGICAL APPLIANCES

The handsome premises of James Woolley, Sons & Co., Ltd., Victoria Bridge, Manchester, have lately undergone a slight internal change by the removal of the surgicala sight internal change by the removal of the surgical-instrument and chemical-apparatus departments to a new depôt at 76 Deansgate, a short distance away. Calling on Messrs. Woolley for the purpose of learning something about this development, I had an interesting talk with one of the directors, Mr. Watson, who first of all showed me what had been done with the space vacated by the department in question. A concern of the magnitude of the boars of tion. A concern of the magnitude of the house of Woolley is always glad of additional floor-space; and the rooms left empty at Victoria Bridge have been converted into an enlarged sundries department, with everything handsome in the way of showcases, specimen bottles, and other things that give a finished appearance. The photographic branch of the department is obviously one with a very complete range of goods. Some of the sundries—c.g., sponges—are arranged in drawers or wall fixtures, and customers are invited to walk behind the counters and make their selection from actual stock. A series of practically dust-free rooms arranged for storing dressings should prove a great convenience. On approaching the Deansgate depôt I was struck by the professional appearance of the window, which is intentionally dressed with goods that a casual purchaser would not ask for. As Messrs. Woolley anticipate an extension of their business in surgical appliances and first-aid outfits through retail pharmacists, they avoid attracting the general public. Truss-making has long been a feature of Messrs. Woolley's surgical-appliance department, and the fine adjustment of which their "Boval" truss is susceptible cannot but contribute materially to the comfort of hernia patients who are sent to them. Under the guidance of Mr. Twining, the manager of the depôt, I explored practically every section of this commodious building, from the basement, with its ample lockers fully stocked, to the store for operating-furniture on the top floor. Passing through the serving department on the ground floor we looked into the wellappointed rooms for fitting men and for postal dispatch; one of these rooms is reserved for dealing with deformity cases, artificial-limb cases, and so forth. Close by is Mr. Twining's sanctum, and at the rear of this floor is a workshop with smithy, presses, and muffle furnaces; beyond this are a packing-room and garage with a goods entrance in College Lane. On the first floor is the board room, on the walls of which are several photographs of great charm taken by the late Mr. Hermann Woolley in the Alps. On this floor, too, are ladies' fitting-rooms (with a separate entrance in Deansgate), furnished with the greatest taste. Above this there is a small but efficient printing department, and also a number of workshops supplied with electrically-driven lathes, polishing, grinding, and sharpening machinery, for the various operations involved in the manufacture of trusses and the other surgical instruments and appliances which the company makes. On the same floor there are sewing-rooms with a staff of machinists, the sewing-machines being electrically driven.

BOOKKEEPING ELIMINATED

During a recent visit to Watford I availed myself of the opportunity of inspecting the factory of the McCaskey Register Co. (within a stone's throw of Watford Junction), where I was given an ocular demonstration of the McCaskey System of accounting without books, which System, since its introduction into this country, has made considerable headway among retailers who have a number of credit customers. Briefly, the McCaskey System has been devised to put an end to bookkeeping drudgery, and may be described as a "One-Writing System of Accountancy," whereby the making of entries in the day-book, in the ledger, and the rendering of invoices, are entirely eliminated. By a novel adaptation of carbonised duplication, combined with the use of the special Cabinet Register supplied by the company, the accounts of the retailer can be kept in a very satisfactory manner, only one writing being necessary for each account. As supplied, the Register makes provision for two hundred customers, but it can easily be adapted to carry many additional accounts. One of the most prominent features of the System is that each account has a complete and separate record to itself, and is posted up to the last purchase, while quick and accurate reference is made, so that the condition of, say, Mrs. Blank's account can be seen at a glance. For use in conjunction with the Register, the company supply appropriate account forms, printed with the individual's name and address. The company do not merely sell the Register, but explain its working thoroughly to their clients and their assistants when it is first installed, and continue to render any necessary assistance so long as the System continues in use. At the same time the Register is adaptable to the keeping of stock records and also to stocktaking, thereby reducing trouble associated with income-tax returns to a minimum. The Register takes up little room, and should prove an indispensable piece of office or shop furniture, as it is well made and ingenious in construction. From practically start to finish the Register is made at the company's up-to-date factory at Watford, where the operations are on a mass-production scale. During a rapid tour of the works I was shown the various stages of manufacture of the Register, commencing with large stocks of wood in process of seasoning, and finishing in the packing and dispatching room. It may be added that the company do their own printing in connection with the System, and during my tour I was shown several ingenious printing-machines. I gathered that the company have quite a machines. I gathered that the company have quite a number of chemists among their clients, and when and where necessary certain adaptations of the System can be introduced to meet the necessities or peculiarities of any retailer's business. Those who find bookkeeping a toil would therefore do well to consider the advisability of adopting the System, of which, after demonstration, I formed a very favourable opinion.

The Pharmacist's lot.—For refusing to supply a customer with medicine a Dutch pharmacist has been fined 25 fl. by the Court in Nimeguen, or twenty-five days' imprisonment. The pharmacy opens to the public from 8 a.m. to 8 p.m., and a prescription was brought to the pharmacy one morning at 7.50 a.m. The patient was informed that "the pharmacy would be open at 8 a.m., and the customer should go to his own pharmacy." The Court saw in this action an offence against the laws by which pharmacists are required to supply medicines on demand at all times. This verdict has caused considerable surprise in the ranks of the Dutch pharmaceutical profession. Hitherto the custom has been to supply medicines after closing hours only on a medical man's prescription bearing the in junction "cito," to indicate that the medicine is really nrgently required. Free exercise of the profession obtains in Holland, as in Great Britain.



When the Postmaster-General decided to relax many of the restrictions on the use of wireless instruments he opened up a new line of business in this country, and although the full official intentions have not yet been disclosed, nor the final arrangements made regarding the dissemination of concerts, news, and other information, the sale of wireless apparatus as a side-line is worth the consideration of pharmacists. Wireless telephony, which is as yet only in its infancy, is a subject of scientific interest of practical utility, and at the same time possesses for all classes of society a fascination which should make for universal adoption, certainly if what has happened elsewhere is anything of a guide. It is obvious that, although some manufacturers may sell instruments direct to the public, the majority of the sales must be done through a retailer. A number of retailers, whose knowledge of wireless is, in the majority of cases, negligible, have already realised this, as an odd crystal receiver, an inductance and a few coils of wire, which form a big window attraction at present, go to show; but many of these traders will either drop out of the business altogether or confine their efforts to selling coils of wire and brass terminals for amateurs trying to build up their own apparatus. Of all people in business nobody has such an opportunity of making a success of and developing a scientific subject as pharmacists, and wireless, if neglected by chemists, will undoubtedly find a home in the stores. The subject requires study, whether taken up as a hobby or a business, but this will prove no greater obstacle to the pharmacist than did photography.

LICENCES

Before installing a wireless receiver it is necessary to obtain a licence, which at present costs 10s. a year, and is procured from the Secretary, the G.P.O., London. It is anticipated, however, that the authorities are likely to arrange for the licences, of which there will probably be two kinds, to be obtained from any post office in the country. Full particulars will be issued when the broadcasting scheme has been definitely settled. The scheme is still under discussion, the trouble, it is understood, being that the eight proposed broadcasting stations—London, Birmingham, Cardiff, Manchester, Newcastle-on-Tyne, Plymouth, Edinburgh or Glasgow, and Aberdeen—will cost some thousands of pounds a year each to operate, and all the manufacturers concerned are not prepared to face this liability. To avoid interference with other established services the Postmaster-General has allotted the wave-lengths of 350 to 425 metres to these broadcasting stations, and is also restricting the times for transmitting messages,

RECEIVING SETS

Receivers can roughly be divided into three types: (1) crystal (the simplest form); (2) single-valve; (3) multiple-valve. The type of receiver to use depends on what the listener desires to hear. Within a ten- to fifteen-mile radius of a broadcasting station a crystal set, using an outdoor aerial, will be quite effective, but with an indoor aerial practically useless. This kind of apparatus will undoubtedly prove the most popular, as, apart from being the simplest to use, though manufacturers are endeavouring to make all sets as near "fool-proof" as possible and issuing detailed instructions with each instrument, it is the cheapest to buy, retailing (complete with aerial and telephones) at about £5, and the cost of upkeep is negligible, no batteries being required. Crystal receivers are like lower-priced cameras—used with

a knowledge of their limitations, excellent results may be obtained. With a one-valve set, using a frame aerial, telephony would be heard over a distance of about ten miles, and with an outside aerial about fifty miles. The most sensitive receiver of all is the multi-valve type, with which, with an outdoor aerial, a range of one hundred miles or more may be obtained. The distances are only approximate, varying considerably with local conditions and on the power of the transmitting station. The lastmentioned instruments enable the Hague concerts to be picked up, and can receive both "spark" and continuous-wave telegraphy. The retail price of this apparatus may be anything from £10 upwards. Valve sets cost a few shillings a year for upkeep of batteries. A loud speaker can be used with the better-class sets, so that the sound is audible to a number of persons at once—a feature that will doubtless prove popular. The general idea

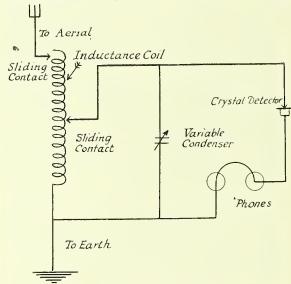
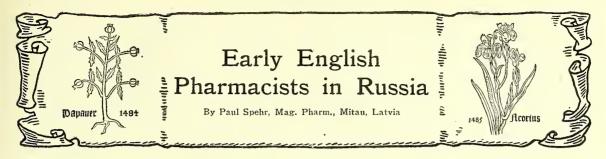


DIAGRAM OF SIMPLE CRYSTAL RECEIVER

among manufacturers seems to be to allow the vendor a discount of about 20 per cent. off retail prices. In addition to the sale of complete sets, much business could be done in the sale of component parts, such as various gauges of instrument wire, ebonite, condensers, terminals, and so forth. It behoves the retailer to be able to give advice regarding the erection of customers' aerials, and to solve other difficulties likely to be encountered by the novice. Outdoor aerials are invariably the more efficient. The Postmaster-General has stated that amateurs will be allowed to erect them of greater length than 100 feet, but for ordinary purposes this distance is sufficient. Cheap telephones are of little value, as results will certainly be disappointing. For those taking up the study of wireless and requiring assistance, a club is to be found in most large towns. The following books will also prove useful: Edelman's "Experimental Wireless" (Oxford University Press); J. A. Fleming's "Principles of Electric Wave Telegraphy and Telephony" (Longmans & Co.); Coursey's "Telephony Without Wires" (The Wireless Press); and the "Year-Book of Wireless Telegraphy."



It is not generally known that during the sixteenth and seventeenth centuries English pharmacists played an important part in the development of pharmacy in Russia. Mr. Spehr, who has had access to original sources of information on this matter, summarises his conclusions.

With the advent of Bolshevism the Russian Empire crumbled to dust, and many ancient institutions, some of which had rendered excellent services, were swept out of existence, including the whole edifice of Russian pharmacy, built up in the course of more than three centuries, and which at the outbreak of the war had attained a very high level. Thanks, however, to the energy inherent in members of the pharmaceuti-

cal profession, Russian pharmacy still survives to a small extent in the socalled Border States, those entities formed from the fragments in the fall of the giant with feet of clay. It is an open question as to how long pharmacies and Border States will be able to continue their existence. For the necessary room for expansion of the profession is wanting, while for the States themselves all the premises for independent evolution are lacking.
One of the first steps

taken by the Soviet Government was nationalise all Russian pharmacies by the simple procedure of seizing them without any compensation to the owners, and placing them in charge of special Soviet commissaries. These commissaries were selected from among the apprentices and assistants, and included all the various untrained helpers formerly employed in the pharmacies, such porters, charwomen, etc., with what disastrous results to the exercise

of the profession may well be imagined. Russian pharmacy is dead, and a profession which ranked high in the scientific world, and which could boast of a splendid organisation and well-conducted businesses, has been practically wiped out.

THE FIRST PHARMACIES

The creation of a pharmaceutical profession—that is, the establishment of privately owned public pharmaciesis the work of Russia's greatest reformer, Peter the Great, who issued a ukase dated November 23, 1701, sanctioning the foundation of a public pharmacy in Moscow, the first of its kind in the Russia of that day. Prior to the opening of this new business, Moscow possessed already two Imperial pharmacies. The date of the establishment of the first of these, situated in the Kremlin, is generally assumed to be 1581, and its founder is erroneously stated to have been an Englishman, James Frencham. Exhanstive searches, however, of the records which I have undertaken show that it was established at a much earlier period, but I have been unable to trace the actual date of its foundation. This pharmacy, later known as the "Old," or "Supreme," pharmacy, was reserved for the exclusive service of the Czar and his family, and it was a very special mark of favour on behalf of the Czar to permit persons of his suite to obtain their medicines from

macists, the hands of

Facsimile of a charter signed by Peter the Great, and dated December 28, 1701, conferring upon Daniel Hurzyan the privilege of opening a pharmacy in Moscow.

this establishment. The second, or "New," Im-The perial pharmacy opened in the town itself in 1672, and was designed to supply exclusively the wants of the Court officials and of the army, but soon private persons were permitted to obtain medicines against pay-ment. Already towards the end of the seven-teenth century it could boast of a very large turnover, and employed a great number of persons, including trained pharbookkeepers, cashiers, gardeners, and For over a distillers. For over a century the conduct of the business in both pharmacies was placed in foreign pharmacists, mostly Englishmen. These pharma cists came only by special invitation of the Czar, or his ambassadors, and were provided with letters of recommendation from the sovereign of their own country, to be welcomed in Moscow with enthusiasm, and they were highly remunerated for their services during their stay at the Czar's Court.

ENGLISHMEN IN RUSSIA

Czar Ivan IV., known to history as "The Terrible," had a predilection for all things English, and maintained a constant and interesting correspondence with Queen Elizabeth, in which he frequently begged her to delegate physicians and pharmacists for his personal service. His requests were repeatedly fulfilled by England's Queen, who never failed to recommend the persons selected by ther to the personal care and protection of the Czar. These early relations between England and Russia are recorded in history. When the English expedition, sent out to find a way to India and China through the Polar Sea, arrived in Archangel in 1553 and sent a delegation to Moscow, Czar Ivan IV. succeeded in utilising this incident for commencing trading relations with England, and these within a short time assumed considerable dimensions. In 1557 the Anglo-Russian Trading Company was founded, whose first agent was the intelligent and energetic Anthony Jenkinson,* who sailed from Gravesend on May 3, 1557, on board the "Primrose," together with the Russian ambassador at the Court of St. James, Ossip Grigorjevitch Nepeja, and arrived in Moscow on September 14. The privilege granted at the time of freedom from all custom dues on English goods entering Russia at Archangel and Vologda, where large factories were established, lasted for nearly a century, and was only abolished as a consequence of a mass petition of the Russian Merchants' Guild in 1649, dictated not only by jealousy and ill-will, but also to some extent by fear of the plague, which at that time was raging in England, being introduced into Russia. Throughout her reign Queen Elizabeth maintained unaltered her friendly attitude towards the Czar, and by many acts of courtesy of a personal nature and by wise measures succeeded in obtaining many privileges for her subjects as regards trading and industrial rights.

AN ENGLISH SETTLEMENT

During the first century of the existence of the Old Imperial pharmacy many English pharmacists took part in its management. The first to be mentioned is Thomas Carver, who was brought to Moscow by the manager of the Anglo-Russian Trading Co. How many times Anthony Jenkinson had travelled to and from Moscow and London in the intervening period is not known with any certainty. But it is established that he arrived in Moscow again on August 23, 1566, and on September 1 had an audience of the Czar. The latter, who at the time was fully engaged with internal matters, seems to have entrusted him at once with an urgent mission. He requested him, inter alia, to procure for him in England the services of a skilful architect ("on architecture which can macke castells, townes, and palaces," as is to be read in an old letter); further, a physician and a pharmacist, as well as men able to discover the presence of gold and silver ("masters such as are cunning to seke ought gold and silver"). It appears that, in order to carry out this mission, Jenkinson returned to London during the winter of 1566-67. In a royal letter, bearing the date May 18, 1567, and which he handed to the Czar on his return to Moscow, the Queen asks the Czar to confirm the privilege promised in the preceding year, and remarks that she has granted permission to all the persons designated by him to proceed to Moscow.

It is an established fact that in that year—1567—a Dr. Reynolds, a pharmacist, Thomas Carver (ten years before, in 1557, the Dutch apothecary, Arend Classen von Stellingswerfft, had come to Moscow in Jenkinson's company), an engineer, Humphrey Lock, and his assistant, John Finton, the goldsmith and assayer ("goldsmythe and goldfiner"), Thomas Green, as well as a number of other craftsmen, arrived in Moscow, as can be gathered from the contents of a letter written June 1, 1568, by H. Lock to Sir William Cecil in London. The English settlement (factory) in Moscow was situated in the "Warwarka," a street of the central part of the town, in "Kitai-Gorod" (Chinese town), behind the Gostinny Dvor (the Russian trading court), in the vicinity of the Church of St. Maxim, and in the so-called Youshkoff Court. The destruction of this English settlement, whereby Thomas Carver lost his life, is described in several contemporary records, including a report of Jenkinson's in a letter dated August 8, 1571, and a statement addressed by a member of the Polish Embassy to King Sigismund of Poland of June 20, 1571. Both reports tally in stating that the prevailing famine had in many places turned

the people into cannibals, while Jenkinson mentions that about 300,000 persons had died of the plague, and an equal number had been slain by the hordes of the Tartar Khan, Dawlet Girai. The house of the English trading company had also been burnt to the ground, and in its cellars (according to other reports, in the "beer cellar") some thirty persons belonging to the establishment, as well as their relations and friends, all of them English people, who had sought shelter there, were killed. Two among these unhappy persons are mentioned by name: Thomas Southam, who came to Moscow in 1566 by way of the Dvina and Novgorod, and Thomas Carver, the English apothecary, who came to Moscow in the year 1567. Unfortunately, nothing is recorded of his activities and experiences during the five years he spent in the Old Imperial pharmacy, which must have been founded some ten or twenty years prior to his assumption of its management.

OTHER ENGLISH CHEMISTS

A number of Englishmen followed Carver as managers of this Imperial Russian pharmacy, most of whom spent a number of years in this position, as will be evident from the following chronological exposition of his successors. On Carver's death the task of managing the pharmacy was entrusted to James Frencham from 1581 to 1584, who again appears to have been placed in charge in 1602, for how long is not ascertainable. He was followed by how long is not ascertainable. He was followed by Ranwall Warley, 1625 to 1630 (?), Philipp Briott, 1630 to 1645, Romanus Thius, the year of his advent is not known, but it is established that he relinquished the position in 1655, to be succeeded by Romanus Binian (or Benyon), who in turn, in 1673, was followed by another Thius, a grandson of the above-mentioned Romanus Thius, and in 1680 by Robert Benshorn. Considerations of space preclude entering into a description of their highly in-teresting experiences, and the activities displayed by each during his separate tenure of office. Nevertheless, there can be no doubt but that their work, as well as that of the numerous English pharmacists who assisted them in the performance of their professional duties and other activities, and whose names are not recorded, has had a very important bearing and has exerted a permanent influence on the course taken by pharmacy in Russia in its riany branches. This is amply proved by the very high standard attained by both Imperial pharmacies towards the close of the seventeenth century. A Western European writer, Schleissing, who records his impressions of a visit to Moscow at that time, devotes a special chapter of his work to a description of the costly and artistic fittings with which both pharmacies were provided, and adds that he can state with every justification that he had failed to come across any pharmacy in Western

Europe which could equal such perfection.

For the history and future development of pharmacy in Russia Peter the Great's ukase of November 23, 1701, proved to be of fundamental importance. By it permission was granted to open eight "free" pharmacies—that is to say, privately owned businesses open to the general public. The illustration to this article reproduces the charter, or "privilege," as it is called, conferring the right to one Daniel Hurzyan to open a public pharmacy in Moscow; it bears the date December 28, 1701, and the Czar's signature.

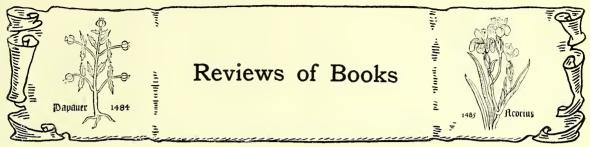
pharmacy in Moscow; it bears the date December 28, 1701, and the Czar's signature.

At the outbreak of the war, Russia had about 10,000 privately owned pharmacies. To-day, of this total scarcely 800 are still in existence in the Border States only, and even these are faced by an uncertain future.

^{*} Jenkinson gained Ivan's special favour on account of his fine beard, which exceeded in length the beards of all the Court Boyars, a fact which in itself is significant.

[†] However, it was very soon after rebuilt, and in 1901 still stood in the same place in an excellent state of preservation. Whether it still exists at the time of writing is not known to the author.

Unpopular Czechoslovak Pharmacy Bill.—The Bill before the Czechoslovak Parliament for the reform of pharmacy in the Republic is unpopular with members of the profession, and numerous meetings have been held to protest against its provisions. It is now alleged in the lay Press that "half the members of Parliament" have been bribed to throw the Bill out when it comes up for discussion. One newspaper states that the President of the House of Representatives has taken criminal proceedings against three persons for attempted corruption of members of Parliament.



A Course of Practical Organic Chemistry. By T. Slater Price, D.Sc., and Douglas F. Twiss, D.Sc. Third edition. 8% in. by 5½ in. Pp. 239. 6s. 6d. London: Longmans, Green & Co., 39 Paternoster Row, E.C. 4.

A course of work in organic chemistry is provided suitable for students working for the examinations of the Board of Education or for the B.Sc. degree. It begins with a chapter on the determination of meltingpoints, boiling-points, and specific gravities, and the methods of detecting carbon, hydrogen, the halogens, nitrogen, sulphur, and phosphorus. Then follow practical instructions in the preparation of organic substances, beginning with the simpler substances and proceeding to compounds. For example, after preparing methane from sodium acetate and soda-lime, the purification of ethyl alcohol and the method of determining the quantity of spirit in a fermented liquor are explained. This is followed by tests for formates, acetates, formaldehyde, acetaldehyde, methyl alcohol, and ethyl alcohol, and exercises in which the following ethyl compounds are prepared: potassium ethyl sulphate, ether, ethyl acetate, ethyl bromide, ethyl iodide, ethylene, ethylene dibromide, and acetaldehyde. The same method is followed throughout, the student being taken through the course in a systematic manner. The end chapter is a scheme for the identification of an organic compound.

Distillation Principles and Processes. By Sydney Young, D.Sc., F.R.S., with the collaboration of Lieut.-Colonel E. Briggs, T. Howard Butler, Thomas H. Durrans, F. R. Henley, James Kewley, and Joseph Reilly. 9 in. by 5\frac{3}{4} in. Pp. 509. 210 illustrations. 40s. London: Macmillan & Co., Ltd., St. Martin's Street, W.C.

Professor Young published a book entitled "Fractional Distillation" in 1903, which described the results of an investigation on fractional distillation extending over many years and resulting in the discovery of principles from which highly efficient still-heads were devised. This work was sold out shortly after the declaration of war, and with a view of extending the scope arrangements were made with other workers to contribute special memoirs on different aspects of the subject. The war postponed the preparation and publication of the book, but now we have a work on distillation which is authoritative and exhaustive. The present volume consists of seven sections, the first of which (230 pages) is a revision of "Fractional Distillation." This contains new matter, such as particulars of Wade and Finnemore's work on the boiling-point of chloroform and an additional chapter on sublimation. Then follow sections dealing with manufacturing processes: "Distillation of Acetone and n-Butyl Alcohol on the Manufacturing Scale" and "Distillation of Alcohol on the Manufacturing Scale," by Joseph Reilly, M.A., D.Sc., and the Hon. F. R. Henley, M.A., F.I.C.; "Fractional Distillation as Applied in the Petroleum Industry," by James Kewley, M.A., F.I.C.; "Fractional Distillation in the Coal-tar Industry," by T. Howard Butler, Ph.D., M.Sc.; "The Distillation of Glycerin," by Lieut.-Colonel E. Briggs, B.Sc.; "The Distillation of Essential Oils," by Thomas H. Durrans, M.Sc. The article on glycerin is short and practically confined to descriptions of the Van Ruymbeke, Garrigue, and Wood systems. Mr. Durrans' article on the distillation of essential oils occupies about forty-eight pages, and is a good résumé of the subject.

Analytische Chemie der Alkaloide. By Professor Dr. K. H. Bauer. 10½ in. by 7 in. Pp. 425. Berlin: Gebrüder Borntraeger, 12 Schöneberger Ufer, W. 35.

The author's aim is to provide a text-book embodying the various tests and methods adopted for the recognition and quantitative determination of plant alkaloids, and thus to include such tests and processes as are otherwise only to be found either in books dealing specially with toxicology or with pharmacognosy. The work is divided into two parts, the first devoted to general information, while the second deals with the various alkaloids specifically. In the first part a brief consideration of the chemical structure of alkaloids is given, followed by the reactions exhibited by alkaloids to various chemical substances. These reactions are grouped under each reagent; thus under the title "formaldehyde-sulphuric reagent; thus under the title formattenyue-surphine acid," the behaviour of dionin, heroin, morphine, codeine, apomorphine, narcotine, narceine, thebaine and papaverine on treatment with this reagent is described. Following this description of the qualitative tests, the volumetric, gravimetric, and optical methods employed for the quantitative determination of alkaloids are reviewed, and the processes in use are discussed. A chapter is also devoted to the microchemical determination of alkaloids, which includes an interesting table dealing admirably with this physical property of these substances. In the special part the alkaloids are dealt with in groups according to their vegetable origin; thus alkaloids of ergot, of coca, of opium, of cinchona bark, etc., are each dealt with collectively. The scope of the work, and the information presented, will best be illustrated by quoting the subjects into which the chapter on coca alkaloids is divided: cocaine is the principal alkaloid present in the leaves of Erythroxylon coca; in addition they contain truxillines, cinnamoyl-cocaine, and tropacocaine. How-ever, it is possible that other alkaloids are also present, which it has not yet been possible to isolate in the form of their native esters (ecgonin esters). The formula and physical properties of cocaine are then briefly set forth, followed by the specific reactions of cocaine, its recognition in forensic analysis, microchemical determination, separation of morphine and cocaine, methods for differentiating cocaine, α-eucaine and β-eucaine, for distinguishing tropacocaine and cocaine, tests for purity of cocaine and its salts, notes giving the properties of d-cocaine, r-cocaine, α -cocaine, l- and d-cinnamoyl-cocaine, tropacocaine, microchemical recognition of tropacocaine, α-and β-truxilline, hygrine, cushygrine, recognition of the hygrines, determination of ecgonin in Java coca, differentiation betwen α and β -encaine, and, lastly, evaluation of coca leaves. The information contained is based exclusively on data published, and the value of the book as a work of reference is cohanced by the fact that in every instance the reference to the literature is given.

Spadacrene Anglica, or, The English Spa Fountain. By Edmund Deane, M.D. Oxon. The First Work on the Waters of Harrogate. Reprinted with Introduction by James Rutherford, L.R.C.P. Ed., and Biographical Notes by Alex. Butler, M.B. 7\frac{3}{6} in. by 4\frac{3}{2} in. Pp. 138, 6s. Bristol: John Wright & Sons, Ltd.

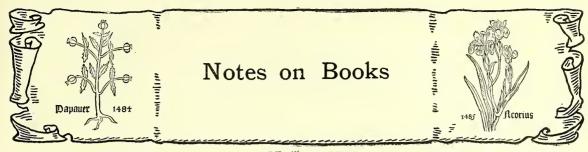
This dainty little volume, which it is a pleasure merely to handle, is, as the title-page, quoted above, with the price added, indicates, a reprint of the earliest account

we have of the Harrogate waters, a very rare treatise first published in 1626. Four editions appeared during the author's lifetime, copies of each of which are preserved in the British Museum, but with the exception of these only two copies of the work are known to exist, so that Dr. Rutherford naturally thinks himself fortunate to have met with one of them in a second-hand bookshop at Harrogate. This was of the first edition, the one here reprinted verbatim, and in the original spelling, except that the old vowel-forms i and u for the consonants j and w are not retained. The long s, too, is discarded, which is perhaps to be regretted, as it would have given additional quaintness to the page. The original title-page and initial letters are artistically reproduced, and the volume is further embellished by a drawing of the Tuewhit Well, which is the main subdrawing of the Tuewhit Well, which is the main subject of the treatise, by Dr. Rutherford's daughter. The production of the book has, indeed, evidently been a labour of love, and the result is at once elegant and scholarly. Its value is greatly enhanced by the biographical notes contributed by Mr. Butler, which extend to forty-two pages. The information given in them is gathered from many sources, some of which are not generally accessible, and throws much light on the early history of this, the premier English spa. Serious errors in the account given of it in the Encyclopædia Britannica and in the publications of the Harrogate Corporation are corrected, the credit of having discovered the medicinal virtue of the Tuewhit Spring being given to the right person, who was not the Sir William Slingsby to whom a local memorial has been erected on that account, but his uncle, Mr. William Slingsby, fourth son of Thomas Slingsby of Scriven. It is noted as strange that Dr. Deane, who might have been expected to share in some measure the fame of the spring he did so much to make famous, and who was a man of considerable standing in his profession, has no place in the collective records of the lives of British medical men by Aikin, MacMichael, and others, or in the Dictionary of National Biography. He seems from the particulars here collected to have been a man of high character and attainments, and the extracts given from his last will and testament are evidence of a piety comparable to that of those notable physicians of the seventeenth century, Sir Thomas Browne, of Norwich, and Henry Vaughan, one of the greatest of our religious poets. Deane's "treatise" is very agreeably written, in a clear and forcible style, with an adequate display of learning, and a not too extravagant laudation of his favourite as compared with other chalybeate springs. Well up in the science of his time, he is not afraid to think for himself and to oppose the errors of those his contemhimself and to oppose the errors of those his contemporaries who follow blindly the ancient authorities, of whom he neatly says, "let us rather pitty their follies, then [than] envy their wit." The name of "the English Spaw" was, he tells us, first given to the Harrogate chalybeate spring by his "very kind and familiar acquaintance," Dr. Timothy Bright, "of happy memory," about thirty years before the date of this treatise, he having "spent some time at the Spaw in Germany; so that he was very able to compare those with this of ours." This Dr. Bright was the author of the "Treatise of Melancholie," which probably influenced Burton's more famous "Anatomy," and of which there is a copy in the Wellcome Museum. Deane, as there is a copy in the Wellcome Museum. Deane, as becomes a member of the profession, gives only very general directions as to the drinking of the water, and is careful to say that it should always be drunk as advised by a medical man.

A Concise History of Chemistry. By T. P. Hilditch, D.Sc. (Lond.), F.I.C. $7\frac{1}{2}$ in. \times 5 in. Pp. 276. 6s. Second edition. London: Methuen & Co., Ltd., 36 Essex Street, W.C. 2.

The compression of the history of chemistry from the carliest times to the present into 218 pages is a miracle of condensation, and the skill and judgment with which it is here done deserve the highest praise. We have compared the book with the much larger one of Von Meyer and find nothing essential missing. The arrangement of the matter is admirable, and the story is enforced

at critical points by diagrams (sixteen in number) summarising the knowledge imparted in such a way as cannot fail to impress it firmly on the student's memory. The author naturally divides his subject into sections, its many branches and ramifications rendering this necessary, yet he retains the division into epochs, which is equally necessary if the general progress of the science is to be adequately noted. Usually these epochs are regarded as four in number, the ancient period of philosophic specula-tion, closing about the beginning of the fourth century; the alchemical epoch, which lasted well into the sixteenth century; the phiogistic period, from about 1700 to 1775; and the modern period, from Lavoisier to the present day. This last Dr. Hilditch divides into three—the fundamental, the static structural, and the dynamic structural periods, beginning respectively about 1780, 1830, and 1880. The first three of the main epochs are necessarily sketched very slightly. Dr. Hilditch does not commit himself to an opinion as to the origin of the word "chemistry," contenting himself with the remark that the first known use of the word "chemia" occurs in an alchemical treatise of the fourth century of our era. It does; but authorities now favour the derivation from the Arabian al-ki-mia and the earlier Greek $Xv\mu ds$, juice, which indicates a pharmaceutical rather than an alchemical origin. Kluge. in his famous etymological dictionary, says, indeed, that this is undoubted. Dr. Hilditch does full justice to the alchemists, but he does not lay sufficient stress on the influence of Greek philosophy, and especially of Aristotle's theory of the quinta essentia upon alchemy. He rightly emphasises the effect of the fusion of medicine and alchemy due largely to Present the Interest. alchemy, due largely to Paracelsus, on the development of scientific chemistry, in turning it away from the vain pursuit of gold into more fruitful channels. It was, however, Boyle, who was equally free from the trammels of alchemical and intro-chemical conceptions, who opened the modern epoch of disinterested research into the composition of matter. Equal justice is done to him, and to the phlogistomists, Stahl, Mayow, Priestley, etc., who, though they erred as to the nature of combustion, were the brilliant chemists," did much to elucidate the composition of air and water, and made other valuable discoveries. With the opening of the modern epoch the story becomes more complicated and the subject divides itself into more complicated, and the subject divides itself into different branches, such as inorganic and organic chemistry, the chemistry of plant and animal life, the application of chemistry to manufactures, physical chemistry, etc., the main features in the history of which are traced as adequately as is possible in such brief space. This occasions a little repetition and overlapping, but it is difficult to see how that could be avoided. When we say that the index of names of chemists mentioned extends to more than a thousand entries, many of them with some-thing like a score of references, the impossibility of doing more than indicate the plan and scope of the work will be seen. To criticise it in detail would require a volume larger than itself. Not its least useful features are the appendices, one of which consists of short biographical notices of about 140 famous chemists arranged under the periods to which they belong, the other being a chrono-logical summary in tabular form of the chief events of chemical history since the time of Boyle, which is in effect a very handy résumé of the preceding chapters. The whole work is admirably well done; the proper perspective is maintained; and the student who has not time to go deeply into the subject can hardly have a better guide to all that it is really needful to know of "historical chemistry." The author does not attempt an explanation of the hypotheses or reactions described "except in so far as the letter are boundary with the letter. far as the latter are bound up with the historical sequence of facts, but he conveys an extraordinary amount of really scientific information in the course of his narrative, Special attention has in this revision of the work (originally published in 1911) been paid to the theory of atomic structure, thus bringing it well up to date. It is for students who have to face examinations in the subject that the book is intended; those who pursue the study mainly for its attrinsic interest will derive more pleasure from a work of larger scope that lends itself to literary treatment, but within his limits Dr. Hilditch has acquitted himself well,



"PHYSIC AND FICTION"

is a taking title for a book, but it is only in part descriptive of Sir Squire Sprigge's work so called. The chapters to which the title more strictly applies are those named respectively "Medicine in Fiction" and "The Medicine of Dickens," and these are likely to be of most interest to all but members of the profession. They are very amusingly written, though with a serious purpose, which is to show the unfairness with which medical men are too often represented in fiction, and the inaccuracy of almost all references to disease and medical practice in novels of all kinds, good or bad. Doctors in fiction, says Sir Squire, are usually either heroes or knaves, whereas in reality they differ little, if at all, from other people in general character: the average medical man is just an average member of society, and he is as uneasy under indiscriminate laudation of his nobility as under the allegation of criminal habits. As for the diseases novelists most affect, heart-disease and phthisis are the chief, the former being "one of the few really refined ways in which nice old people may die," and the latter "the proper way for good young people to finish." The diaphragm is the line of demarcation between polite and vulgar disease, and the novelist, it is wittily added, rarely hits below the belt.

SOME OF OUR OLDER WRITERS,

however, do so pretty often. Smollett, for instance, descends to obscenity; but Sir Squire Sprigge does not go further back than to Dickens, whom he credits with greater verisimilitude in his portrayal both of members of the profession and of disease than most of his tribe. He excels particularly, we are told, in his treatment of mental disorders, whether actual insanity or eccentricity closely bordering upon it. The fact is, it would seem, that the world of Dickens is, speaking broadly, an insane world, a world in caricature: he had a congenital leaning towards the abnormal, and an eye that exaggerated every peculiarity until it became a kind of disease. It does not matter, however, says the author quite truly, whether the novelist is accurate or not (unless he poses as an expert) if he succeeds in being credible; even an impossibility, if it is made to appear probable, may be allowed him—a dictum as old as Aristotle.

Comfortable Words about Poisoning

occupy two chapters of Sir Squire's book, but they are real, not fictitious cases of poisoning which he considers, his object being to show that though the advancement of the science of toxicology would appear favourable to an increase of criminal poisoning, yet the law keeps well ahead of the law-breaker, and the science at its disposal is always superior to that possessed by the criminal. The first case he considers is that of Mary Blandy (1752), in which the chance of detection was almost nil, and he shows how in every successive case he deals with down almost to the present day the methods of the poisoner became less and less crude, only to be met by the more and more subtle tests by which detection has at last become practically a certainty. The rarer drugs which, it might be hoped, would escape detection are difficult to obtain, the poisoner himself can know comparatively little of their action, the chances are that he will give such an overdose as will by its effect arouse suspicion, and the mere fact that such a drug has been used is proof of criminal intent. The practicability of bacteriological poisoning the author considers so remote as to be scarcely worth discussing.

SIR FREDERICK TREVES,

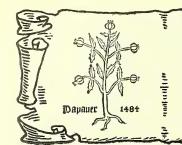
in his latest book of travel, "The Lake of Geneva" (and a very delightful book it is), remarks, as every traveller in the district must have done, upon the tedious, dull monotony of the scenery between Vevey and Lausanne, cut up into "chess-board patterns and cubist sketches" by its vineyards; and speaks as if the popular impression that a vineyard should be beautiful were based mainly upon "early Bible teaching." Gazing upon these formal squares of closely pruned dwarf vines, he says, "one fails to appreciate the rapturous declaration, 'My beloved is unto me as a cluster of camphire in the vineyards of En-gedi'" ("a cluster of camphire" should, of course, be, as the R.V. has it, "a cluster of hennaflowers"). But there is no need to go so far back for justification of the popular impression. Those who have been into Italy will have seen there vines trained on trees with quite beautiful effect; indeed, it is a common practice in that country. It was certainly so at one time. The elm was the tree preferred, and between it and the vine there was supposed to be a peculiar sympathy. Our first parents in Eden, says Milton, "led the Vine

To wed her Elm; she, spoused, about him twines Her marriageable arms"—

and the idea here suggested is frequently found expressed in older poets. A vineyard, on this plan, with the additional charm of an occasional henna-shrub with its lovely flowers and "odours of Paradise," would be very different from those which weary us travelling up and down the Rhine or along the northern shore of Lac Leman.

AUTO-SUGGESTION,

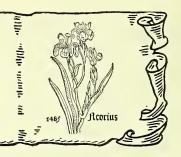
as illustrated in the work of M. Emile Coué and expounded by M. Baudouin, is not so great an enemy of physic as we may have supposed, but both invokes its aid and supplements its action. The two, says M. Baudouin, are complementary; each, taken alone, is inadequate. "Suggestive practice is not, properly speaking, a therapeutic method," but it is a very great help to therapeutics. Medicine acts from without, suggestion from within; the latter belongs to the pedagogic rather than to the medical sphere; it is "an education of certain mental aptitudes and habits which human beings have been tending more and more to lose." Precisely what it is, how it works, and what it will and will not do are set forth lucidly, and I should say for most readers convincingly, in M. Baudouin's admirable book, "Suggestion and Auto-suggestion," of which a translation by Eden and Cedar Paul is now in its fourth edition, although the first appeared so recently as 1920. All suggestion, according to M. Baudouin, is really auto-suggestion; although for convenience' sake we distinguish between spontaneous suggestion, reflective suggestion, and induced suggestion, yet suggestion really takes its rise in our own sub-conscious self; it may be defined as "the sub-conscious realisation of an idea it is not an act of the will, but of thought; we do not have to will the end (indeed, that would often be to defeat our attempt), we have simply to think it. M. Baudouin does not advise every doctor to use direct suggestion systematically. He is emphatic upon the necessity of a prescription: the patient expects it, and expectation is the patient expects. tion is everything. The prescription, however, as M. Coué says, should not be handed over without comment, or it will do little good. If its purpose is explained and the results foretold its effect will be ensured.



Stovaine

An example of Grignard's Reaction

By C. A. COFMAN-NICORESTI, B. ès Sc. et Lett.



Stovaine, or dimethyl-amino-ethyl-dimethyl-benzoyl pentanolhydrochloride 271.646 $\rm CH_3C(C_2H_5)(O.CO.C_6H_5).CH_2.$ $\rm N(CH_3)_2.HCl$ represents a fine example of synthetic chemistry. Fourneau started with the intention of grafting the characteristics belonging to cocaine and tropacocaine on to a much simpler nucleus than the piperidine structure

which invariably carries with it poisonous qualities. He decided to replace it by a base belonging to the amino-alcohols. The first of this class which he might have used is dimethyl-amino-lactic acid, which by its constitution, $(CH_3)_2N-CH_2.CHOH.COOH$, looks like the simplest expression of cocaine. Finding, however, difficulties in preparing it, he tried its homologue, amino-oxyisobutyric acid, in the form of dimethyl-amino-benzoyl-oxyisobutyric methyl chloride.

$$\begin{array}{c} \text{CH}_2\text{N} \swarrow^{\text{CH}_3}_{\text{CH}_3} \cdot, \text{ HCl} \\ \downarrow \\ \text{CH}_8 \longrightarrow \text{C} \longrightarrow \text{OCOC}_6\text{H}_5 \\ \downarrow \\ \text{CO}\text{-CH}_8 \end{array}$$

It proved to be a strong anæsthetic, practically nonpoisonous, but very irritating to the tissues. Forneau then used a tertiary amino-alcohol of the type

$$CH_2N$$
 CH_3
 CH_3
 $COOH$

Thanks to Grignard's discovery, this could be easily prepared from chloracetone; and thus he obtained stovaine:

$$\begin{array}{c|c} CH_2N \swarrow \begin{array}{c} CH_3 \\ CH_3 \end{array} & HCI \\ \\ C_2H_5 & COOC, C_6H_5 \\ \\ CH_3 & CH_3 \end{array}$$

and its structure shows it to be dimethyl-amino-ethyl-dimethyl-benzoyl carbinol hydrochloride. Actually, Fourneau prepares stovaine by mixing a solution, in benzol, of dimethyl-amino-dimethyl-ethyl carbinol:

$$(CH_3)_2$$
 N. CH_2 - C OH
 C_3 H

with a solution of benzoyl chloride in the same solvent. The proportions are: Dimethyl-amino-2methyl-ethyl carbinol, 5 grams; benzol, 15 grams. Mix this solution with

a solution of benzoyl chloride (C₆H₅COCl) 10 grams, benzoł 10 grams in a flask of about 150 c.c. capacity without cooling. A violent reaction takes place, then a perfect solution results, the whole is cooled, the mass is dried by exposure to air, filtered off, washed with benzol, and crystallised out from three times its weight of absolute alcohol. This will yield about 10 grams of stovaine, with a melting-point of 174-175° C. He obtains dimethyl-

amino-dimethyl-carbinol, (C
$$\rm H_3)_2N$$
—C $\rm H_2$ —C—O $\rm H$ from dimethyl-chloro-carbinol, C $\rm H_2$ Cl.COHC $\rm H_3$, and a

solution of anhydrous dimethylamine, (CH₃)₂NH, in benzol. The proportions are: Dimethyl-chloro-carbinol anhydrous 19.5 grams, 25 per cent. solution of dimethylamine in benzol 90 grams. Mix and cool. Heat in a closed tube up to 125° C. for a day; dry the crystals by exposure to air; wash in benzol; mix both benzol solutions; remove excess of dimethylamine and a part of benzol; wash the acid solution with ether and evaporate the acid solution to small bulk; cool and add 20 grams of soda lye, followed by 40 grams of sodium carbonate; extract twice with 100 c.c. of ether. Distil base at 74.75° C. under a pressure of 29 millimetres, or at 150-154° C. at ordinary pressure.

Benzoyl chloride, C₆H₅.CO.Cl, can be obtained from

Benzoyl chloride, C_6H_5 .CO.Cl, can be obtained from benzoic acid according to the following reaction: C_6H_5 COOH+PCl $_5$ = C_6H_5 COCl+POCl $_3$ HCl (for details of this reaction see Gatterman, "Praxis Org. Chemiker," p. 296; also Fourneau, "Préparation des Médicaments Organiques," p. 288).

benzoic acid, C_6H_5 .COOH, can both be obtained through Grignard's reaction, which is as follows:

If ethyl-iodide is heated with metallic zinc a white crystalline body is obtained (zinc-ethyl-iodide, C_2H_5ZnI), which on further heating yields zinc alkyl, thus: $2C_2H_5ZnI$ = $Zn(C_2H_5)_2+ZnI_2$. The zinc alkyls are colourless liquids, heavier than water, and give important reactions. They react with alkyl iodide and yield hydrocarbons: $(CH_3)_2Zn+2CH_3I=2CH_3\cdot CH_3+ZnI_2$; they also react with water: $(CH_3)_2Zn+H_2O=2CH_4+ZnO$ to yield methane. With halogens they yield the alkyl haloids; with sodium and potassium they form the respective alkyl compound by displacement of zinc; all these bodies, however, are known only in solution of zinc alkyl, and cannot be obtained pure. The importance of these reagents for synthetic purposes is minimised by one very great drawback, namely, they are instantaneously inflammable in contact with air, and must be distilled in an atmosphere of hydrogen. Grignard made the very important discovery that alkyls, in the presence of anhydrous ether, will combine with metallic magnesium and yield additive

products, thus:
$$CH_3Br + Mg = Mg < CH_3$$
 (i.e., methyl

magnesium bromide). Dry magnesium powder is added to an alkyl derivative dissolved in anhydrous ether; the reaction takes place with evolution of heat, which sets the ether boiling. By the use of sufficient ether the magnesium completely dissolves in proportion of one atom of metal to one molecule of alkyl derivative, yielding an alkyl-magnesium haloid of the type $C_nH_{2n+1}Mg$ (haloid). The ether can be recovered by distillation under reduced pressure. Petroleum ether or benzol can be used instead of ether, but a catalyser, such as tertiary amine or ether, and a higher temperature, is required. The ether may form a combination: $C_2H_5MgBr+(C_2H_5)_2O$; that is,

$$\begin{array}{c} C_2H_5\\ \\ C_2H_5 \end{array} \hspace{-0.5cm} \subset \hspace{-0.5cm} \begin{array}{c} MgC_2H_5\\ \\ Br \end{array}$$

which, according to Gatterman, has actually been isolated. The magnesium alkyl haloids, or Grignard's reagents as they are called by some chemists, are easily oxidised, and readily react with water thus:

$$CH_3MgCl+H_2O=CH_4+Mg$$
 Cl
OH
. This reaction is often

used for the estimation of hydroxyl groups by measuring the volume of methane evolved. If dry carbon dioxide gas is passed over an alkyl magnesium haloid and the product treated with water the carbonate of the next hydrocarbon series is obtained:

$$\begin{aligned} &\text{(1)} \quad \text{CH}_3\text{MgCl} + \text{CO}_2 = \text{CO} \\ &\text{CH}_3 \end{aligned} + \text{H}_2\text{O} = \text{CC} \\ &\text{CH}_3 + \text{MgClOH}.$$

With alkyl sulphates the following reaction takes place:

$$C_2H_5MgCl + SO_4(CH_3)_2 = C_6H_5.CH_3Mg < Cl$$
O.SO₃CH₃.

With aldehydes secondary alcohols are obtained, thus:

$$C_2H_5.C$$
 H
 $C_6H_5MgCl = C_6H_5.C$
 $OMgCl$
 C_6H_5

on addition of water,

$$C_6H_5 - C \underbrace{-\frac{1}{C_6H_5}}_{C_6H_5} HOH = C \underbrace{-\frac{1}{C_6H_5}}_{C_6H_5} HOH$$

With formaldehyde the product is a primary alcohol:

With ketones tertiary alcohols are obtained:

$$C_6H_5.CO.CH_3 + CH_3MgC1 = C_6H_5C \stackrel{\bigcirc}{\underbrace{OMgC1}}$$

(Acetophenone)

$$+ H_2O = C \begin{pmatrix} C_6H_5 \\ CH_3 \\ CH_3 \\ OH \end{pmatrix} + Mg \begin{pmatrix} Cl \\ OH \\ OH \end{pmatrix}$$

(Dimethylphenylcarbinol)

With nitriles ketones are obtained:

(1)
$$C_6H_5C \equiv N + CH_3MgBr = C \stackrel{C_6H_5}{\rightleftharpoons} NMgBr = CH_3$$

(2)
$$C = \frac{C_6 H_5}{NMgBr + H_2O} = C = \frac{C_6 H_5}{NH} + Mg = \frac{OH}{CH_3}$$

With the ester of formic acid a secondary alcohol results; two molecules of the magnesium haloid react with one molecule of ester:

Instead of esters the respective chlorides or anhydrides can be used. From the alcohols thus obtained by the elimination of the $\rm H_2O$ molecule unsaturated hydrocarbons can be obtained, thus:

$$C \underbrace{ \begin{matrix} C_6H_5 \\ CH_3 \\ CH_3 \end{matrix}}_{OH} - H_2O = C \underbrace{ \begin{matrix} C_6H_5 \\ CH_3 \end{matrix}}_{CH_3}$$

If organic magnesium compounds are used in excess of ethyl formate an aldehyde is obtained instead of an alcohol, according to the following reaction:

The above reactions are quite sufficient to show the great importance of Grignard's reactions in synthetic chemistry.

New Books

Hull, Thomas.—Oils, Fats, and Fucls. 7½ in. × 4¾ in. Pp. 143. 3s. 6d. Blackie & Son, Ltd., 50 Old Bailey, London, E.C. [The first part of the book, occupying eighty pages, is a good résumé of the properties, tests, and uses of the chief vegetable and animal oils, solid fats and waxes, and mineral oils. The section on fuels deals with combustion, calorific values of coal, and liquid fuels. The book is especially adapted for the students in day and evening technical schools.]

O'Connor, D.C.—How to Pass the Board: A Text-book for Preparing Students to Pass the Examinations of any State Board of Pharmacy. 8½ in. by 5½ in. Pp. 435. 15s. The Spatula Publishing Co., Boston, Mass. [A guide for students of pharmacy to the Qualifying examinations of the several Boards of Pharmacy in the United States. It is founded on the U.S. Pharmacopoeia. The various chapters deal with different groups of galenicals, etc., and at the end of each are questions for the student to answer.]

Statistique des Engrais et Produits Chimiques destinés à l'agriculture. 12 in. × 8 in. Pp. 350. 25 fr. Bureau d'Etudes Economiques Industrielles et Agricoles, 12 rue de Miromesnil, Paris. [This work deals with the world's production, consumption, and commerce in chemical manures and chemical products used in agriculture from the years 1910 to 1920. This is the second volume, and it continues the work of MM. E. and M. Lambert, which was first published in 1912, and known as "Annuaire Lambert," There are over 300 tables of statistics relating to sodium nitrate, ammonium sulphate, calcium nitrate, cyanamide, calcium phosphate, potassium salts, etc., and the book is one that will appeal to all engaged in those industries.]

Safeguarding of Industries Act

Optical Instruments

THE Committee appointed under Part II. of the Safcguarding of Industries Act to inquire into a complaint by the British Optical Instrument Manufacturers' Association, Ltd., the British Photographic Manufacturers' Association, the Spectacle Manufacturers' Association, and the Drawing Instrument Manufacturers' Association, that optical and other scientific instruments manufactured in Germany are being sold in this country at prices below the British cost of manufacture, held its final sitting on June 19. The complainants, who have now withdrawn the application as regards all electrical instruments, were represented by Sir Arthur Colefax, K.C., and the Hon. Stafford Cripps. The opponents, who are individual agents of German firms, were represented by Mr. Inskip, K.C., and Mr. Arthur Evans, M.P. The chairman of the Committee is Sir R. Henry Drew, K.C.B., and the members are Mr. A. K. Davies, Mr. Rayner Goddard, Mr. A. E. Holmes, and Mr. J. F. Mason.

The case for the opposition was further considered. Evidence of a general character was given clearing up certain points raised at previous hearings, but it was definitely stated by the opponents that the imposition of a tax of 33½ per cent. under Part I. of the Act had stopped the sale of cheap German microscopes in this country. The rest of the evidence of the opposition mainly concerned binoculars.

THE PRICE OF MICROSCOPES

Further rebutting evidence was then called for the complainants. Mr. Conrad Beck, of R. & J. Beck, spoke of the extraordinary cheapness of certain microscopes in Germany and of the unfairness of the comparisons made by the opposition, similar instruments not being compared. A microscope corresponding to one of Beck's £30 lbs. instrument had been bought in Germany for £7, and we installed for £8 lbs. in an institution here after paying the $33\frac{1}{3}$ per cent. duty.

Sir Arthur Colefax said that prices at which German microscopes had been bought in Germany had not been mentioned by the opponents, and he proposed to give these prices.

Mr. Beck, as a further instance that the price of manufacture in Germany was no criterion of the prices at which microscopes were sold here, said that a Zeiss microscope, equal to a £34 instrument here, could be bought for £11 2s. 6d. in Germany, and, when the Reparations duty was paid, the price would be £13 16s. These prices were supported by German price lists. Mr. Beck said that the price of British microscopes had not been raised at all since the imposition of the $33\frac{1}{3}$ per cent. duty on the German instruments under Part I., and there was no evidence that there would be an increase if the tax was put on under Part II. It was absurd to suggest, as had been the case in the cyidence of Professor Bone, that scientific research would be hampered if a tax was put on, because the cost of apparatus in a research was an extremely small proportion of the total.

During the evidence cf Mr. Beck it was stated that an attempt had been made to get British makers of microscopes to fix prices with the Germans, but Mr. Beck said he was rude to the gentleman who made the suggestion because he did not wish to have any dealings with the Germans. His own view was that the British makers are new turning out better instruments than the Germans, and are entitled to a better price. Witness added that he did not wish to join a ring to fix prices with the Germans. Messrs. Dolland and Messrs, Aitchison, it was explained, are not parties to the application for the tax. These firms are not now manufacturing, it was said. Messrs. Dolland did manufacture during the war, but had now given up their works. Both these firms were selling fereign goods at the present time.

Mr. Watson Baker, of W. Watson & Sons, Ltd., dealt with the previous evidence as to prism binoculars, and said that he had received an offer of 100 Zeiss 6×30 prism binoculars at £6 per pair, the general London price being £14 10s. per pair. Instances were also given of very large differences between the retail prices of binoculars in Germany and those in this country, all of which went to show that prices could drop in this country, and the British manufacturers be seriously interfered with. Witness suggested that the prices of German binoculars were being purposely kept high in view of the proceedings before the Committee, and once the danger of a duty was passed, German prices in this country would at once drop. On the question of wages Mr. Baker said that in October the wage of a German worker was 800 marks per week, and in April the wage was 1,200 marks per week, an increase of 50 per cent., and not 100 per cent., as stated by the opposition. Witness also said that German prices in the Colonies were much lower—about 33½ per cent.—than in England.

FILM CAMERAS

Mr. A. J. Denniss, works director of the Houghton-Butcher Manufacturing Co., repudiated the suggestion made in previous evidence that his firm was known more for plate cameras than roll-film cameras, and handed in figures to show that his business is primarily in roll-film cameras. A statement had also been made that the Houghton-Butcher Co. was overcapitalised at £775,000, but as the turnover of the company in 1919 was £1,085,000, in 1920 £1,473,000, and in 1921 £1,163,000, anyone familiar with the cost of finance would agree that with this turnover a capital of £775,000 was not excessive. It was not suggested, said witness, that German cameras are dumped here and sold under the cost of production, but the complaint was that the German workman was paid at a rate which was the equivalent of 4d, an hour here, and so the price here was much lower than that at which we could manufacture. It never would be possible to manufacture at German prices in this country if a decent standard of living is to be maintained by the workers. The present low German wage, assisted by a depreciated exchange, enabled the German manufacturers to send goods here at much lower prices than those at which we could manufacture.

In the course of further evidence for the applicants it was stated that so long as wages in Germany remained as they are the Germans would have a large margin of profit and would possibly pay the tax. In that way British prices would not be increased. In fact, they had not been increased; on the contrary, there had been some decreases in British prices since the tax had been put on under Part I. It was further stated that German raw glass for optical purposes is coming into this country at about half the price of British, the German glass being at the same time of a slightly better quality, so that even if a second duty were put on of 35½ per cent. the German would still be better and cheaper. The German glass had less defects, and, therefore, in working up there was less waste. One witness for the applicants said he had just had a consignment of German optical glass for spectacle lenses, and would be compelled to continue doing so if he was to compete.

Opponents' Views

Mr. Inskip, K.C., addressing the Committee on behalf of the opposition, said the complainants had not given the evidence that might have been expected to prove the case for the imposition of a duty. The evidence showed that there had been an unnatural expansion in the mannfacture of these various articles during the war, and it was assumed apparently that there was some merit in certain firms having taken up this manufacture during the war, which entitled them to some protection against foreign competition. He asked the Committee to dismiss that consideration, because under the Excess Profits Act there were provisions which gave manufacturers who took up a manufacture at the request of the Government a higher rate of profit to recoup them for

their capital outlay. All firms, of course, took the view that the allowance was totally insufficient, but the statutory provision was made nevertheless, and must be taken into account. Another consideration was that the liquidation of Government stocks, both in this country and Germany, affected the market, and the astonishing boom after the war led some firms to manufacture on too large a scale, with the result that the slump coming so soon after the boom had left these manufacturers with large stocks on their hands. The evidence he had given, for instance, of Zeiss prices was from the people who were selling for Zeiss in this country, and these prices compared very favourably with British prices. The evidence on the other side of Zeiss lenses being offered at very low prices was merely that offers had been made, and not that sales had been effected at these low prices. Any such sales could not be in the ordinary way of business. It was a striking feature of the case for the complainants that so little had been said of the sale in this country of goods at extremely low prices owing to the depreciation of the mark. The evidence given was preferably consistent with the view that the sales that were being made were of German war stock accumula-Taking the comparative prices that had been given for microscopes, it was clear that the addition of 331 per cent. to the German prices would not bring them up to the British prices, and the only result of the mposition of a duty would be to increase the German prices without benefiting the British makers. A feature of the case was that British makers claimed their goods were superior to the German, and if that were so, then they must take the burden of having to charge a higher price. They could not ask for a tax to correct the difference. As to cameras, the film camera was ousting the plate camera, and in that respect the chief competition was from America, so that any tax on German cameras would improve the position of the American makers. Another point was that it appeared that too high a profit was allowed the retailer in this country by British makers, and, moreover, on the evidence, it also appeared that Messrs. Ross were not carrying on business as efficiently as was possible. therefore, the catalogue prices of British lenses were adjusted, and economies were made in manufacture, the German and British prices would not be found so very far apart. As to ophthalmic lenses, the evidence of the complainants all pointed to the fact that it was the French makers who were undercutting the British makers, and, finally, nothing had been said as to the extent to which German competition, due to depreciation of the mark, had affected, or would affect, British employment. The request here was for protection pure and simple, for which a good deal was to be said, but that was not the remedy provided by this Act.

Applicants' Reply

Sir Arthur Colefax, K.C., replying for the complainants, said that the catalogue prices in this country were purely petitions and bore no relation to the cost of manufacture. As further evidence of this, it had been shown that as the result of the tax under Part I., the greatest increase in the German price was half of the $35\frac{1}{3}$ per cent., and in some cases that had since disappeared. All this sprang from the depreciated value of the mark. It was quite obvious that there was a great deal of importation going on quite independently of the sole agencies that were in existence in this country with such firms as Zeiss and others. It might be asked what were these sole agents here for? The answer was that they were keeping the nest warm, and nobody here was buying from these sole agents at the fixed list prices. It was a far cry now to talk of surplus war stores, and the evidence was clear that these goods were ordinary German goods and could be obtained in the ordinary way in Germany, and the whole of his evidence demonstrated beyond doubt that these German goods are being, and have been, offered for sale in this country at prices which were almost appallingly below the prices at which British manufacturers can profitably manufacture. This disparity would

be reduced by the imposition of a tax, and so, at any rate, give the Britisher who preferred a British article to exercise his preference. The British manufacturers did not come before the Committee in a purposeless manner, and in any event it was not for the Committee to consider whether the duty would benefit British industry or not. The point was to determine whether German goods were being offered for sale or sold at prices below those at which British manufacturers could profitably manufacture.

Java Cinchona

Two-AND-A-HALF centuries have now elapsed since the fever-combating properties of cinchona were recogniseda drug which made its first appearance in Europe in 1640, and the curative properties of which were at first principally utilised by the Jesuits, as expressed in one of its earlier designations as "Jesuits' Powder." Already in 1736 the first serious attempts were made to convey a certain amount of cinchona seeds from South America to Europe, but it was not until 1845 that Dr. Weddell succeeded in bringing a few seeds of this precious plant from Bolivia to Europe. These were planted, states the "Bulletin de l'Association des Planteurs," Jardin des Plantes in Paris, and were the first cinchona plants cultivated in Europe. At that time the importance of cinchona was fully recognised both by the British and the Dutch Governments, both of which sent out expeditions to investigate the conditions under which this plant grows in South America, and in conjunction therewith to study the possibilities of introducing its cultivation in British India, and in the Dutch East Indies, respectively. Both expeditions returned with a large supply of seeds and shoots. The first cinchona plants to be cultivated in Java were offered to the Government of the Dutch East Indies by the Jardin des Plantes, and were planted in 1851. These plants died in 1862, but the observations made brought home to the Government of the Dutch East Indies the vast possibilities which the cultivation of cinchona held out for the colony, and induced it to send an expedition to South America in order to collect a large amount of seeds and shoots. This step marked the inception of the cultivation of cinchona in Java, and undertaking which in the course of time has assumed a vast importance and has assured to that colony a practical monopoly of the world supply of this valuable drug.

The success which has attended this undertaking is largely due to the efforts of the Government of the colony, which succeeded in securing the collaboration of experienced planters, botanists, and chemists, in order to investigate thoroughly the whole question of selecting the most suitable variety, with the greatest yield of a kaloid. Better than any lengthy descriptions, states the French journal, is it possible to demonstrate by figures how the Dutch have succeeded in surpassing British efforts at cultivating cinchona, and in support of its statement adduces the analyses of the yield in alkaloid for the same species of Cinchona Ledgeriana, undertaken in 1898:

Cinchona bark cultivated in India: 7.38 % quinine sulphate
Ceylon: 6 22 %
Java: 12.55 %

It is apparent that Java cinchona yields twice as much quinine as the plant grown in India, and hence the reason for the want of success of the British undertaking is abundantly illustrated. This great success is solely due to the Dutch Government cinchona plantations, in which the planters place their full confidence. The seeds supplied by these State undertakings fetch the highest prices, and it is by no means rare to find that as much as 10, 12, or even 15 florins is paid for a single shoot offered by these State plantations. At present the world production of cinchena bark aggregates about 5,000,000 kilograms, an amount representing about 250 tons of quinine.

THE CHAIR OF CRYPTOGAMY at the Faculty of Pharmacy in Paris is now officially termed the Chair of Cryptogamy and Microbiology. Professor Radais is at present in charge of the double course of instruction.

Trade Report

The prices given in this section are those obtained by importers or manufacturers for hulk quantities or original packages. To these prices various charges liave to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling and the like. Qualities of chemicals, drugs, oils, and many other commodities vary greatly, and higher prices than those bere quoted are charged for selected qualities of natural products even in bulk quantities.

42 Cannon Street, E.C. 4, June 20

OWING to technical reasons connected with the publication of this issue, our Trade Report closed for press on Tuesday morning. In the short interval which has elapsed since our previous Report, little of interest has transpired in Mincing Lane, where a further stop has been put to trading by the fluctuations in the rates of exchange. The unexpected reduction in the Bank rate last Thursday to 3½ per cent, should help to stimulate trade considerably, and if, as is hoped, the turn in trade has come, cheap money should assist the movement by its diversion into commercial channels. Among the few changes which have taken place is an advance in menthol, all the cheap parcels on the spot having been disposed of. Matto Grosso ipecacuanha remains firm and in upward tendency, owing to the smaller spot supplies. Cascara sagrada is easier; nux vomica remains plentiful on spot and is easy; higher prices are wanted for gentian. Beeswax is dearer, and as the demand of late has improved, stocks are much reduced. Asafetida is firm and tragacauth is easier. Gum acacia is much dearer at the source. Turpentine has advanced considerably,

Higher	Firmer	Easier		
Anise oil, star Celery seed Lead, white Litharge Menthol Mint oil (Jp.) Red lead Turpentine Wax, bees'	Gentian Glucose Gum acacia Ipecacuanha (Matto Grosso) Salicylic acid Shellac Tamarinds (E.I.)	Cascara sagrada Cinnamon Cocoa butter Coconut (desice.) Petitgrain oil (Parag.) Soy (Ch.) Tragacanth Vanillin		

Crude Drugs, etc.

Aloes.—Cape continues plentiful on the spot, with firsts offering at from 28s. to 29s., good hard bright seconds at 25s. to 26s., and thirds at from 20s. to 22s. 6d. Ordinary to fair Curação offer at from 47s. 6d. to 60s., with pale livery from 85s. to 95s. Good bright Socotrine in skins is offered at £9, bright, part hard, in kegs at £7 10s., and in tins and cases at from 75s. to 95s. per cwt., as to quality.

Antimony is slow, with English held for £27 to £29 10s. for ordinary brands, while foreign regulus is worth £23 c.i.f. to arrive, at which business has been done lately, although spot lots command fully £24. Crude has hardly been mentioned, ranging from £14 per ton upwards.

Arsenic is firm, but showing some irregularity on account of the second-hand lots of Cornish powder offering rather cheaply at below £40 per ton. First-hand sellers want about £42 delivered London. Grecian has remained off the market, and there is not much foreign available.

Asafettda is steady, with good selected almondy offering at £8 5s. per cwt. down to £5 for blocky almoudy.

CAMPHOR (REFINED).—Japanese slabs continue quiet at 3s. 7d. per lb. on the spot, and for July-August shipment 3s. 4d. c.i.f. is quoted.

CASCARA SAGRADA is easier, old bark offering at 70s. per cwt. on the spot, and bright thin new at 62s. 6d.

Castor oil.—French water-white is quoted as follows, ex wharf London: In barrels, 58s. per cwt.; drums, 59s.; and cases, 61s. 6d. Hull-make is firm, pharmaceutical

offering at £57, second pressing at £50, barrels included, ex mills Hull, in lots of not less than one ton.

CHAMOMILES.—The 1921 Belgian crop is now exhausted on spot, and only old brownish flowers are obtainable.

CINNAMON is easier to arrive, Ceylon assortment offering at $8_4^3\mathrm{d}$. per lb. c.i.f.

CLOVES remain dull, fair Zanzibar offering at from 1s. 1d. to 1s. 2d. per lb.; June-August shipment is quoted at $11\frac{1}{2}$ d. and July-September at 9d. c.i.f.

COCOA BUTTER is easier, best English offering at 1s. 7d. per lb. in not less than one-ton lots.

COCONUT (DESICCATED) is 6d. per cwt. easier on the spot. with fine and medium Ceylon offering at 38s. 6d. per cwt. To arrive, June-July shipment is quoted at 36s. 6d. c.i.f., and for July-August 37s. c.i.f. has been paid.

Cod-Liver oil.—Our Bergen correspondent writes on June 14 that the Finmarken cod fishing was again very poor last week. The increase of cod was only 500,000, and of cod-liver oil only 490 hectolitres. The total output of all Norwegian cod fisheries, compared with that of previous years, is as follows:

	J.	,	(No. 10	orio ii b .			
				Catch of	Steam-refined	Livers for	
				cod	cod-liver oil	crude oil	
_	_				(hect.)	(hect.)	
To	June	10, 1922		47,200,000	78,259	14.827	
,,	**	11, 1921		38,400,000	56,621	12.688	
97	22	12, 1920		36,600,000	54,700	6,200	
20		14, 1919		29,000,000	35,000	4,900 -	
	•••	15, 1918		23,500,000		16,100	

Business in the oil is at a standstill, and the price of 100s. per barrel c.i.f. London for finest non-freezing steam-refined is quite nominal.

COLOCYNTH.—Fair pale whole Turkey apple can be had at from 1s. 9d. to 1s. 10d., pulped at 1s. 10d. to 2s., and fair at 1s. 6d. per lb.

COPPER-SULPHATE.—There has been a steady demand, chiefly for export to the Continent, and the recent firmness seems well sustained. Makers are now doing comparatively well, while the returns of exports for last month turned out quite satisfactory, the total being 6,571 tons, which makes an aggregate of 30,581 tons for the five months, this comparing with only 22,205 tons for the same period last year. Liverpool f.o.b. terms for export are about £27 10s. to £28 per ton for casks, less 5 per cent.

GENTIAN is dearer at from 42s. 6d. to 45s. per cwt. on the spot.

GUM ACACIA is dearer, Kordofan sorts offering at 55s. and cleaned at 60s. per cwt.

Honey.—Fair quantities are arriving on this market. Good to fine Jamaica is quoted at from 50s. to 60s., brown to pale amber at 35s. to 45s., and dark 30s. to 32s. 6d. Australian is 35s. to 40s. per cwt.

IPECACUANHA is still tending higher, sellers quoting 7s. to 7s. 3d. per lb. for Matto Grosso. Minas is 6s. 9d., East Indian 6s. 6d., and Cartagena 7s. 6d. to 7s. 9d. per lb.

Lead products.—There does not seem to be very much moving, but the market is again firmer for lead-oxide as well as dry white lead as quoted by home makers, whose terms were revised towards the close of last week, but the quotations for white-lead-in-oil were retained as before, in view of the sharp slump in the price of linseed oil. F.o.b. terms for that description of compound stand at £35 10s. to £38, according to quantity. Ground dry white lead is 10s, per ton dearer, being at £40 to £42 2s. 6d., according to quantity. Red lead and litharge were raised 20s. per ton, ranging both from £36 10s. to £39 f.o.t. for home consumption, or f.o.b. for export.

LINSEED OIL.—There was a sharp slump at one time last week down to £39 per ton for spot delivery on a poor demand, but new buying was attracted and the market rallied considerably from the worst, and closed on Monday at £42 spot. Linseed is also steadier.

LIQUORICE ROOT.—Fair arrivals have taken place from the Levant, and 27s. 6d. per cwt. will buy usual quality. Decorticated sticks and decorticated cuttings are quoted at 105s. MENTHOL is dearer, as most of the cheap parcels offering on the spot have been sold at up to 22s. to 22s. 3d., and further buyers on Monday at 22s, 6d., with sellers now asking 23s. per lb. for Kobayashi-Suzuki. Arrival prices are higher, sellers of July-August shipment asking 22s. c.i.f.

The exports from Japan during March amounted to 246 piculs, valued at 294,737 yen. During the three months ended March 31 they were as follows:

 Piculs ...
 ...
 ...
 674
 ,634
 483

 Yen ...
 ...
 ...
 1,010,613
 592,943
 494,482

Mercury.—The position, although somewhat obscure, is practically unchanged. Demand is very moderate and export business is restricted. There is not much Italian offering, and it is believed that the quantities of Spanish in second hand, although of fairly large dimensions, have been already appreciably reduced. This second-hand mercury represents part of the large stock disposed of recently here on behalf of the Spanish mines and split up between merchants and dealers on the basis of about £11 per bottle. This mercury is thus being worked off at a good margin of profit based on the current prices. These range from £11 10s. for Italian up to £11 15s. for Spanish. The fact deserves notice that there were no imports during last month, compared with 505 bottles same month last year. The total imports for five months thus were 5,276 bottles, against 10.896 bottles for the corresponding period of 1921.

Musk.—Spot quotations for Tonquin natural pods are being made at from 106s. to 110s, per oz.

Nux vomica remains easy, with supplies plentiful on spot, good Cochin offering at from 30s. to 32s. 6d. per cwt.

OLIVE OIL.—Finest French edible is firm at from 11s. to 11s. 6d, per gallon on the spot.

Salicylic acid is rather dearer, sellers now quoting 1s. 6d. per lb. on the spot for B.P. crystals or powder.

Seeds.—The following are current spot quotations: Anise, Spanish, 80s. per cwt.; Russian, 71s. Canary seed, spot, Larache, 80s. per quarter; c.i.f. Larache, 74s.; Mazagan, 95s.; Tangier, 115s.; Spanish, dirty, 110s. Caraway seed.—Dutch scarce and very firm, 56s. to 60s. per cwt.; no Morocco on spot. Coriander seed is firm; wormy, 14s. to 22s. 6d. per cwt.; sound, 35s. to 40s.; sound and musty, 27s. Cumin seed, 85s. per cwt. Dill seed, 26s. per cwt. Fenne seed, 60s. per cwt. Fenugreer seed, 14s. per cwt. Hemp seed, 17s. per cwt. Linseed, 24s. 9d. per cwt. c.i.f.; Moroccan: None on spot. Mustard seed, 34s. per cwt. good English yellow. Celery seed is dearer at 115s. spot.

SHELLAC.—The spot market is quiet but firmer, sellers of usual standard TN orange asking 380s, per cwt.

Sov.—Chinese is cheaper at 4s. 3d. per gallon, duty paid.

TAMARINDS are rather higher at 12s. 6d. per cwt. for East Indian on the spot.

Terpineol.—Spot quotations are made at from 2s. to 2s. 3d. per lb. for French or American.

TRAGACANTH.—Finest flakey white is easier at from £35 10s. to £55 per cwt.; good seconds can be had at from £35 to £45, and thirds at from £30 to £40. Hog descriptions are freely offered at from 75s. to 85s. per cwt.

Turpentine.—We deal with the general position in our editorial columns. The market this week is very strong, the sudden collapse in the American rate of exchange early this week having had an effect on a rather lively trade demand. Stocks are again getting rather low, and on Monday the market closed strong at 89s. spot.

VANULLIN is easier on the spot at from 36s, to 36s, 6d, per lb.

WAY, BEES', has shown a decided upward tendency of late, and the market is dearer on reduced stocks and improved demand. Jamaica is quoted at from £6 10s. to £6 15s. per ewt., bleached Calcutta at from £7 10s. to £8, East African at from £5 to £5 5s. (at which sales have been made), and Benguela at £5 7s. 6d.

Essential Oils

DEMAND has been fairly active, although prices remain steady, except for Japanese mint oil, which has advanced. Sicilian oils are unchanged, but bergamot has been in request at favourable prices, and holders anticipate a firmer tendency. Paraguayan petitgrain is cheaper.

The imports and re-exports of essential oils into and from the United Kingdom for May 1922, compared with the same month in 1921 and 1920, were as follows:

 May Imports in lbs.
 1920
 1921
 1922

 ", ", ", value"
 543, 339
 ... 153, 299
 ... 248,807

 ", Re-exports in lbs.
 £204,164
 ... £35,562
 ... £75,894

 ", ", ", value"
 £123,560
 ... £11,142
 ... £26,624

ANISE (STAR).—" Red Ship" is quiet on the spot with sellers at 2s. 2d. per lb. The c.i.f. price varies from 2s. 3d. upwards.

BAY.—West Indian is unchanged at from 11s. 6d. to 14s. 6d. per lb., as to percentage.

Bergamor is unchanged on the spot at from 16s, to 16s, 6d, per lb. for 37 to 39 l.a. In some directions stocks are held for 17s.

Bois de Rose (Femelle) is quiet and unchanged at 13s. 3d. to 13s. 6d. per lb., according to quantity.

Bois DE Siam is quoted at 3s. per lb. for spot.

Cassia is nominal at 5s. per lb. for 80 to 85 c.a., and 4s: $4\frac{1}{2}$ d. c.i.f. for shipment.

CEDARWOOD is unchanged on the spot at from 1s. 6d. to 1s. 8d. per lb. for drums or cases.

CINNAMON.—Ceylon is nominal on the spot at $5\frac{1}{4}d$. per oz.

CITRONELLA.—Ceylon is steady at 1s. 114d, per lb.; for a line 1s. 11d, would be accepted in some directions. The price to come forward is unchanged at 1s. 84d, e.i.f. Java is nuchanged at 2s. 11d. to 2s. 11½d.

Geranium.—Bourbon is steady at 22s. 6d. per lb., although some holders are quoting up to 25s. per lb. spot.

LAVENDER.—French is quoted at from 15s. to 16s. per lb. on the spot for 36 to 40 per cent. estster.

Lemon is unchanged at from 3s, 3d, to 3s, 6d, per lh. The price for shipment is unchanged at a range of 3s, 3d, to 3s, 7d, c.u.f.

Lemongrass.—Cochin is steady on the spot at $2^7_8\mathrm{d}$, to $2^{16}_8\mathrm{d}$, per oz.; for September-October shipment $2^{2}_{16}\mathrm{d}$, c.i.f. is quoted.

Linaloe.—Mexican wood oil (rather carelessly distilled) is offered at from 11s. to 11s. 6d. per lb.

MINT.—Japanese dementholised Kobayashi-Suzuki has been in good demand and is dearer. For spot 5s. 1½d. per lb. is reported paid, and up to 5s. 3d. is now quoted. For shipment 4s. 8d. c.i.f. is about the figure.

ORANGE.—Sicilian sweet is unchanged at 13s. 6d. per lb. spot. The price to come forward is 12s. 6d. to 13s. c.i.f. For bitter 11s. 3d. to 11s. 6d. c.i.f. is quoted.

Palmarosa.—Spot quotations vary considerably as to seller, from 15s. to 16s. per lb. being asked, the latter tor an oil with 92 per cent. geraniol.

PATCHOULI.—Spot quotations are steady at from 37s. 6d. to 40s. per lb. for Penang or Mysore.

PEPPERMINT.—American natural is unchanged at from 9s, to 9s. 6d. per lb.

Petitgrain.—Paraguayan is easier at from 7s. 6d, to 8s. per lb., but there is no demand.

Jamaican Exports

According to the Colonial Office Report for 1920, recently published, only half the amount of pimento was exported as compared with 1919. "The Industrial Chemist" earried out researches on the preparation of oil from pimento leaves and the manufacture of eugenol, iso-eugenol, and vanillin. The yield of oil and content of eugenol varied considerably with the season of the year and the sources of the pimento leaves. Experimental shipments of pimento-leaf oil (about 130 lb, in all) were made from the Government laboratory, and sales effected in London and New York at 10s, per lb. The state of the market, however, was such that large forward contracts for pimento-leaf oil that would justify

the erection of a factory to produce this oil on a large scale could not be placed. Orange oil sold at very high prices, and a revenue of £90,000 was received by the owners of wild oranges for this product.

Sandalwood Oil from Java

AT a conference held recently in Batavia, the question was raised whether it might not be possible to distil the oil from the wood of Santalum album, which occurs in great abundance on the Sunda Islands, instead of exporting the wood to Europe, particularly in view of the high value of the oil on the European market. Heer Plomp, the works manager of the Insulinde Factory Sentono in Kediri, who has had a large experience in several oil distilleries both in Europe and in the Dutch East Indies, and who was called upon for his opinion, expressed the view that such an undertaking held out every promise of success. Although the official report has not yet been published, it is assumed that the factory would show a profit after five years. The "Preanger Bode" states that the Government of the Dutch East Indies would contribute the necessary sum for the plant. The advisability of erecting a plant for the distillation of oil of cloves and of oils and fats from the nutmeg is also under consideration.

World's Consumption of Nitrates

THE annual requirements of natural nitrates amounted to:

	1913	1920
	tons	tons
Continental Europe	 1,700,000	790,000
Great Britain	 124,000	73,000
United States	 609,000	1,270,000
Other countries	 88,000	215.000
Total	 2,520,000	2,348,000

The decrease is due to the fact that in 1920 many European countries were not in a position to purchase the necessary supplies of nitrate, while the production of synthetic nitrates from the nitrogen of the air is proving a serious competitor to Chile nitrate. The available stocks of Chile nitrate amounted to:

December 31,	1913	***	 490,000	ton
,,	1919		 1,576,000	
,,	1920		 1.341.000	,,

Australian Customs Regulations

In their Bulletin No. 39 the British Chemical Trade Association informed members of an impending change in the Australian tariffs, and said that the present prohibitions against imports of German and other late enemy countries' goods would be lifted on August 1 next, and that a system of sliding tariffs would be brought into force. There has, however, been a strong rumour that this change would not take place, and that the Australian Government had recently decided to maintain the present prohibitions. Inquiry has been made at Australia House, and the Association has received the following reply, which will make the matter quite clear that the prohibitions will end as stated:

From the Official Secretary, Commonwealth of Australia: I have to inform you that it has been officially announced that the embargo on the importation into Australia of goods manufactured or produced in Germany, Austria, Ilungary, Turkey, or Bulgaria will cease to operate on August 1 next. This office has no reason to suppose that the Commonwealth Government propose to defer the date fixed for the removal of the embargo. In the event of any further information being received on this point your Association will at once be notified.

Dye-stuff Imports into Japan

THE importation of dyestuffs into Japan has increased considerably of recent years, as is evident from the following forums:

16 01 00 1							
During the						Average valu	e
first half of		kin		yen		per kin	
1916		383,000		2.473.600		6.46 yen.	
1917		204-600		1,267,400		6.19 "	
1918		821,800		5.261.000		6.39 ,,	
1919		1,202,100		6.719.000		5.59 .,	
1920	***	1,740,900	***	8.265.200	***	4.75 ,,	

Until 1916 Germany provided 80 per cent, of the dyestuffs imported into Japan, followed by Switzerland; the imports of dyestuffs from Great Britain, France, and the United States were so small that they were not registered by the official statistical bureau. In 1917 the United States assumed the place formerly occupied by Germany. Already in 1918, but more particularly in 1919 and 1920, imports

from Great Britain and from France assumed a growing importance, although the United States head the list. The Japanese production of dyestuffs in 1918 reached a total of 9,000,000 kin, or about 90 per cent. of the amount imported in 1913.

German Export Contracts

BRITISH traders will be aware that, under the present system of trade control in Germany, it is the practice to fix minimum prices for goods to be exported from Germany to foreign destinations; and, further, that, as regards most important branches of trade, German exporters who desire to export goods to countries whose currencies are considerably appreciated in relation to the German mark are now required to obtain payment for the goods in the currency of the country of destination. In this connection the attention of the Board of Trade has recently been called to several cases in which German manufacturers who have contracted to supply goods to importers in this country at fixed prices have alleged their inability to fulfil the contract, or to complete deliveries thereunder, on the ground that the German licensing authorities, alleging that the agreed price is too low, have refused to issue the necessary export licences for the goods. Traders in the United Kingdom (says the Board of Trade Journal") who receive offers of goods from German exporters at fixed prices are accordingly advised to obtain written assurances from their prospective suppliers that the competent trade control authorities in Germany have undertaken that the necessary export licence or licences will be forthcoming under the proposed contract conditions as to price and as to the currency in which payment is to be made for the goods. If this precaution be adopted the British importer will have safeguarded his position to this extent, that he will have in his possession evidence that his German supplier has not offered him goods at prices, and under conditions, which are contrary to the current regulations of the export control authorities.

Saffron Cultivation in Macedonia

The U.S. Vice-Consul, Frank H. Baxter, of Salonica, Greece, has sent a special report to Washington on the cultivation of saffron in Macedonia, from which we gather that the conditions of cultivation are similar to those prevailing in Spain:

The root of the plant is set in the ground in September and October about 7 in. below the surface; it is left in the ground six or seven years without replanting. The plant springs from the ground one day, and the next morning at sunrise there opens a flower of four and sometimes five petals and five to ten pistils, part red and part yellow. Each onion-like bulb gives every second or third day ore flower, and from ten to twenty flowers each season—i.e., from the latter part of September to the end of October. In the early morning of the day plants bloom the harvesting of the crop begins. Women and girls are employed to do the harvesting; they go into the fields as soon as the blooms open and cut the entire flower from the stalk. The work is all done by hand. The flowers are then taken in baskets by the workers and spread on fibrous carpets, made for this purpose, with a coarse surface, left to dry for a day, and then "fanned." This fanning operation separates the dry petals from the flower, leaving the pistils caught in the fibre of the carpets. The pistils thus caught are left to dry for another five or six hours and then collected and the red separated from the yellow. The red oistils are utilised in producing a red dye. In this operation it is possible for a worker to separate up to one oke (2.32 lb.) a day. The three villages, Goblitza, Vanitza, and Spourta, in the district of Cozani, Macedonia, at one time produced a crop estimated at 1,500 okes; but cereal planting has been more profitable lately, consequently the crop is now only from 600 to 800 okes per year, a reduction of about 50 per cent. After the harvest the saffron is packed in a crude state in matting tranks containing about 50 kilos, each and hauled by donkeys or ox teams to the shirping point, Verria, a town of about 20,000 inhabitants. There the trunks are loaded into freight cars and carried to Salonica, 50 kilometres away. On arriving at Salonica the trunks are loaded into freight cars and carried to Salonica, 50 kilometres away. On arrivin



Letters for this section should be written on one side of the paper only.

The writer m y adopt an assumed name for purposes of publication, but he must in all cases furnish his real name and address to the Editor.

The Bristol Pharmaceutical Conference

SIR,—As an old member of the British Pharmaceutical Conference, and also of the Pharmaceutical Society, I should be strongly opposed to merging the Conference in the Society. Not only is the Conference a body untrammelled by statutory obligations and limitations; it is open to professors, medical men, and manufacturing chemists, who are interested in pharmacy but outside the Society. The Conference has acquired a character and tradition of its own, which differ from those of the Society. I venture to think that the instituting of the Practice Section was a mistake. It would have been better to continue on the old lines of one Science Section, giving the more learned papers at one time, and the more popular at another, so that members could attend according to their interests and inclinations. The Pharmaceutical Society might have a Conference to discuss ethical and trade questions.—Yours, etc.,
D. B. Dott.

Failure of the Dangerous Drugs Act

SIR,—The point raised by "Surrey" (C. &D., June 17, p. 66) is a very important one to all pharmacists with a large dispensing connection. We ourselves have been faced with the same trouble with regard to repeat prescriptions, and now supply one of our medical clients with cocain. hyd., which no doubt is used in the same manner by himself. It seems very unfair that in carrying out the provisions of an Act of Parliament chemists should be deliberately destroying their legitimate business.

Yours truly, GALEN (15/6).

SIR,—It is both interesting and instructive to read in the French news (C. & D., June 17, p. 41) that M. Lafay, President of the Paris Society of Pharmacy, in his address to that body, stated that the Dangerous Drugs Act has totally failed in its main purpose to stop the illicit traffic in these drugs. This, of course, is what we have experienced in this country; in fact, the reports of court cases appear to be more frequent of late, and point to increased activity in this underhand trade, as for one offender caught there must be dozens who are not, and the greater the difficulty in obtaining the products the higher the profit accruing to a successful smuggler. In this country, as in France, the legitimate pharmacists who would never lend themselves to this traffic have to take all the responsithat their labour is futile. A further light is let into the workings of the Act by the letter of your correspondent "Surrey" (C. & D., June 17, p. 66), who gives an instance of a Harley Street physician supplying ointment to a patient on account of the cocaine ingredient. Truly the profession has its eye on the main chance, but it is only what a large number of pharmacists foresaw when the Regulations were introduced. There is no doubt that, although it may be done quietly and unobtrusively, there is a grand "Putsch" on the part of the medicos to scoop in the whole of the allied part. in the whole of the allied professions and trades, so that it will in time be illegal for anyone but a qualified medical man to supply or deal in any commodity used for bodily ailments. This procedure can also be seen in the work ing of the welfares and clinics which have been instituted in all districts, and which, originally started for purposes of examination and advice, now supply all requirements to the patients—medicines, infants' foods, dentures, etc. And under cover of a semi-Government Department the usual routine and safeguards which are a part of the pharmacist's training and daily work are frequently ignored; it is not uncommon for customers to purchase bottles in

which to procure their medicine from the clinic, and one can afterwards see the same bottles with lotion or liniment in them, sometimes without even a label on, and there is apparently no distinction between poisonous preparations and innocuous ones. This question of welfares and clinics is one which is used by the promoters of the Pharmaceutical Society's scheme for a higher examination in bacteriology and clinical analysis, to produce pharmacists who are qualified to take up this work, the argument being that these clinics are gradually filching our legitimate trade; but I notice that although they are so anxious to provide for the pharmacist of the future, there is not a word as to what steps they are taking to protect the pharmacist of the present, whose trade is being encroached on at the moment. It is, of course, possible that they look on the man already in business as a dying species, and the Society is anxious to be off with the old and on with the new. Yours faithfully,

CLINICUST (17/6).

Safeguarding of Industries Act, 1921

SIR,—Will you kindly allow me to reply briefly to Mr. Alderton's letter in the C. & D., June 17, p. 67? First of all, Mr. Alderton has omitted to state that he is an official of the Association of British Chemical Manuficial Official of the Association of British Chemical Manuficial Official of the Association of British Chemical Manuficial Official Of facturers. I mention this fact so that your readers may understand and appreciate at their proper value the views stated therein. Mr. Alderton appears to have misunderstood the views of traders as voiced in their continued protests against this mischievous legislation. One of their chief complaints is that many industrial chemicals, the manufacture of which is well established in the United Kingdom, are sheltered by their inclusion in the "key" list. It is suggested that the imposition of the $33\frac{1}{3}$ per cent. duty has very materially put up prices to consumers in this country. But if Mr. Alderton's contention were correct there appears to be no good reason for continuing to enforce the Act, for the only possible interpretation that can be given to his statement is that British makers can hold their own with outside competition. The avowed object of own with outside competition. Part I. of the Act was to establish and ensure the future manufacture in the United Kingdom of certain chemicals that are essential to the safety of the nation in time of war. That was the battle-cry of the interests that that alone, that it was passed. In practice the Act is 99 per cent. simply "tariff reform" camouflaged. It covers and levies a duty of $33\frac{1}{3}$ per cent. on (1) hundreds of products that are not made and are never likely to be made in the United Kingdom; (2) hundreds of products that are not "key" industries and which have no relation to questions of national safety in time of war, thus endangering the safety of the nation's trade in time of peace. (3) It excludes and allows in in time of peace. free of duty some products that are war-time essentials and that are made here, such as gallic acid.

Yours faithfully, O. F. C. Bromfield, Secretary, The British Chemical Trade Association.

The Struggle for Existence

quite clear that "Pre-war Manager" SIR,—It is (C. & D., April 15, p. 69) is not reading the signs correctly on the home-trade barometer He is speaking of employment; I spoke of profits. And I hope he will be grateful to me for helping him to read the signs aright. In 1914 there were plenty of jobs for the men in our trade; but in 1922 there are said to be 2,000 surplus men looking for jobs. Now, this has little to do with good or bad trade and profits, but is caused by-

- 1. Women coming in during war and staying in after it.
- 2. Too high wages of men.
 3. The fall in gross profits due to big percentage of patents, observable even long before 1914, and the fall in net profits due to enormous rates, taxes, wages, and light
- 4. Too many men qualifying at expense of nation several years earlier than they otherwise would have done.

 5. Disinclination of some of these newly qualified men to

adapt themselves to the only work left in shops to do-viz., packing, window-dressing, selling, and some dispensing and compounding.

6. The stoppage of emigration for seven years, and the stoppage of the drift into dentistry, medicine, and the wholesale, all of which would have taken away nearly

There cannot be any change for the better under two years. It will take that time to start national emigration of people into farming in the Colonies, the stoppage of which in 1914 has caused much of the trouble to-day nationally. In 1914 nearly one million people emigrated.
John Burns spoke of "The emptying of the home reservoir "; but John need not have worried. We have seen the home reservoir overflow since then owing to good It was the emigrants for the last 100 years wages. creating foreign and colonial demands for British goods which enabled us to keep our continually rising population in food and clothing at home. It was the emigrants who created towns, and therefore created the need for chemists abroad as well as at home. They tell you to-day that there are not any factory jobs in Canada and Australia and South Africa to go to. Quite true. There was none between 1814 and 1914; none guaranteed before you went. But millions did go, and made a living out of the land out of mines or eather great Little we will be land out of mines or eather great Little we will be land. the land, out of mines, or out of wood. Until two million more farms and orchards are planted in our Colonies we cannot hope to employ all our chemists either here We have eight millions of people in the United Kingdom who could have been abroad by 1922 if the war had not interrupted the outward flow of emigration. When we get back our export trade to the same as 1914 (which will take us two years at least) we cannot even then employ all our chemists' assistants unless and until these two millions of extra farms have been planted abroad. To-day two millions of "out-of-works" are receiving (say) £1 a week each, equal to 100 millions yearly. But if these two millions with their families had been abroad they would have been earning in wages perhaps 300 millions a year for the upkeep of their families. Really, they would have been earning for capital quite 900 millions yearly, because wages should only be about a third of the total earned by a worker, the rest going in rent, rates, expenses, interest on capital, and profit to the capitalist. Out of that 900 millions, say half would have come to England and Scotland, Wales and Ireland, as foreign orders for food, drink, drugs, clothing, tools, bicycles, and thousands of other things. I cannot give the time to write more to-day, but supposing these eight millions of people were abroad, how many bicycles would they need this spring from Coventry? How many will they buy while they are getting the dole? Therefore it is not the wastage of 100 millions in doles which is troubling this country to-day, but the loss of nearly 1,000 millions of real earnings which our eight millions of superfluous people should be earning as their contributions towards the upkeep of the various parts of the world. Even if Great Britain got only 300 millions as our share of orders, it would mean a third nearly of our whole volume of 1914 import and export trade, which (if I remember rightly) came to 1,000 millions of exports and imports fer the first time in the history of our country in 1912 or 1913, and continued throughout part of 1914. So that the chief part of our trouble is our failure to start emigration on a national basis in January 1919 by recruiting one million men for a development Army to use up the huge Army stores. The other part of the trouble is our failure to do away with the war bonus of 32s. a week by 6d. or 1s. a week reductions at January 1919. In sixteen or thirty-two weeks we could have had it all off. It would have meant a saving of thousands of pounds to factories, and would have enabled us to quote (say) 1s. 6d. for zinc buckets for export to Argentina instead of 6s. 6d., which I believe was the price until late in 1920 or early 1921, and at the same time the cost of living would have been tending downwards by slow and easy stages. The working-man would have consented more readily to small reductions, instead of waiting for three years and then knocking off 16s. a week at one stroke. All this was put before one

M.P., with the usual results (in November 1918)—a polite note, a message over 'phone, and nothing done. The drug-trade wholesalers have lost money in foreign business; the retail drug-trade was dragged at the carttail of the Profiteering Act, which died of paralysis; and now half of the retail chemists are trying to get the years 1918-22 revalued for income-tax, because they find they were not even making the usual 33½ per cent. gross in the midst of the profiteering, but it now turns out to have averaged less than 25 per cent. Is it any wonder that chemists are shy of paying £3 to £4 a week to newly qualified "fledglings" with nothing to recommend them but the Minor certificate? Is it any wonder that big firms with many retail shops have reduced their staffs? As I have pointed out, chemists have the Council they deserve. Earnest men; great talkers; some Aldermen, men of fine presence, who look well at a dinner, some of them awed by the paintings of the old drug-trade heroes on the Council Chamber walls; a few who think the paintings ought to be thrown out; whereas I'd leave the paintings where they are and eject three-quarters of the Council. But, then, I have no dignity, and very little culture; I merely look ahead, and mak' sure and leave nothing to chance. Yours truly, JAY MACK.

Retrospect of Fifty Years Ago

Reprinted from "The Chemist and Druggist," June 15, 1872

An Old Invoice

The following is a copy of an invoice for drugs made out more than seventy years ago. The purchaser was a surgeon on a ship, and the invoice is very carefully written, but has no printing or engraving of any kind about it. Its chief interest consists in a comparison of the prices of that day with those of our era.

London, 23 Feb., 1798.

Mr. T. Greenshields, Circe. Bot. of the Company of Apothecaries.

Dot. of the	Comp	any o	T = 7 F	ounecas	ites.
				lb. oz.	£ s. d.
Ung. Basil. fl.				3 0	0 6 6
Cerat. Epulot.				4 0	0 8 8
Camphor	• • •			0 2	0 1 0
Pulv. Ipecac				0 4	0 9 6
Vitriol. Alb				1 0	0 0 10
		• • • •		0 8	1 0 0
Opium		• • • •	• • • •	1 0	0 6 8
Saeeh. Saturn.		• • •			
Magnesia	• • •	• • •			
Nitr. Purif		• • •		1 0	0 1 4
Ol. Olivar. opt.				2 0	0 4 8
Sp. C.C				2 0	0 6 4
,, Cinnam				1 0	0 3 8
Emp. Mercur.				1 0	0 3 10
Ol. Terebinth.				1 0	0 1 4
Pil. Coloc. sx.				0 2	0 3 4
Sp. Lavand, C.				0 6	0 1 104
Sp. Vin. Rect.				2 0	0 5 8
Mel. Britan				4 0	0 6 0
Ung. Hydrarg. for	·t.			2 0	0 11 4
Sal, Glauber				16 0	0 9 4
Axung. Porcin.				6 0	0 6 0
Tinet. Myrrh.			•	0 6	0 1 11
Thebaie				1 0	0 9 8
Flor, Sulph				2 0	0 1 4
Puly, Cort, Peruy,	* / *			4 0	2 4 0
				1 0	0 3 8
Mum. Arab. opt.	***			1 0	
Manna 2nd	• • •				0 5 2
Vials, in sorts			* * .	4 doz.	0 7 4
Box, Bottles, Jars,					0 11 2
Tow			• • •	9 0	0 6 9
Porterage, Watera	ge, F	reight	, &		
Postage		• • •			0 5 5
					£10 16 6

N.B.-10 per cent. discount if paid within 3 months.

Apothecaries' Hall.

26 Feb., 1798.

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I am. Sir.

Your humble servant, S. Backler.

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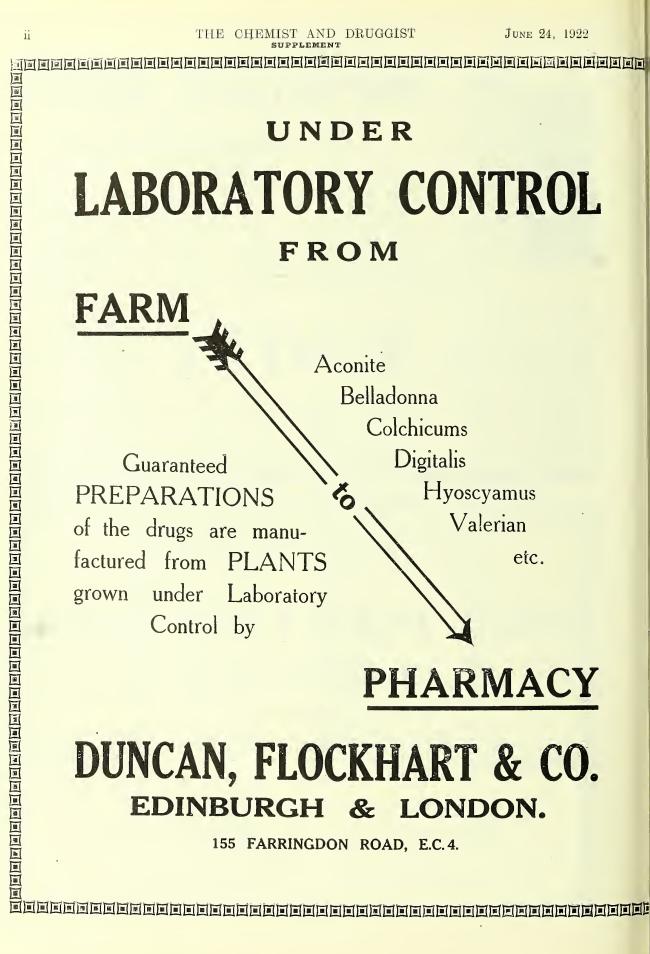
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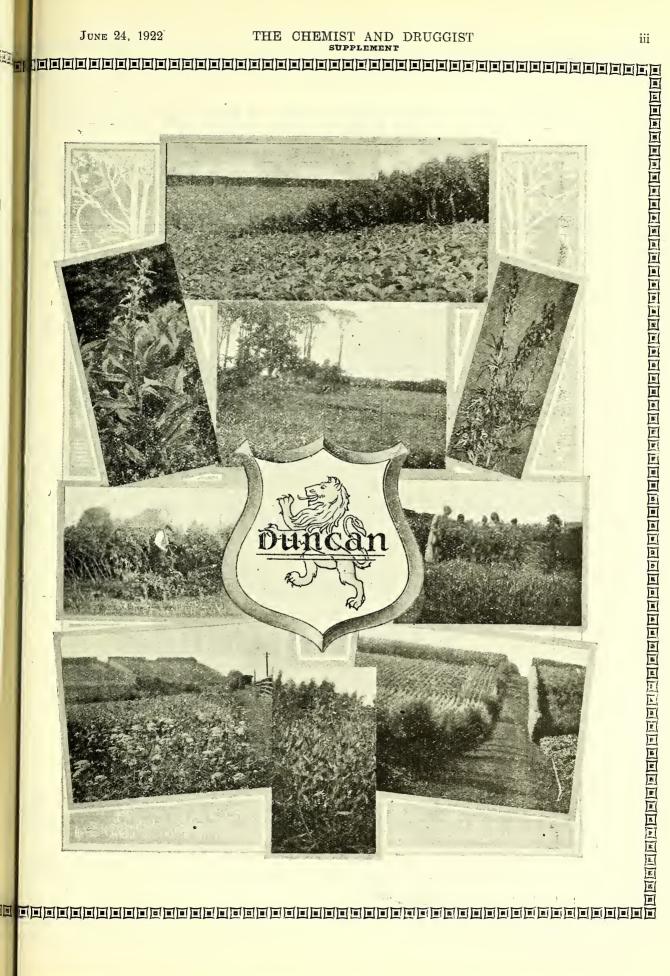
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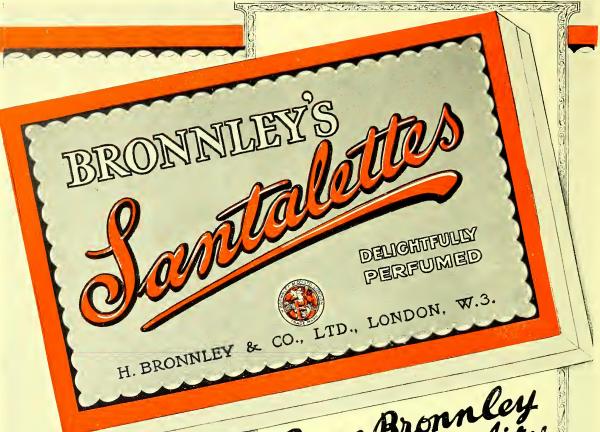
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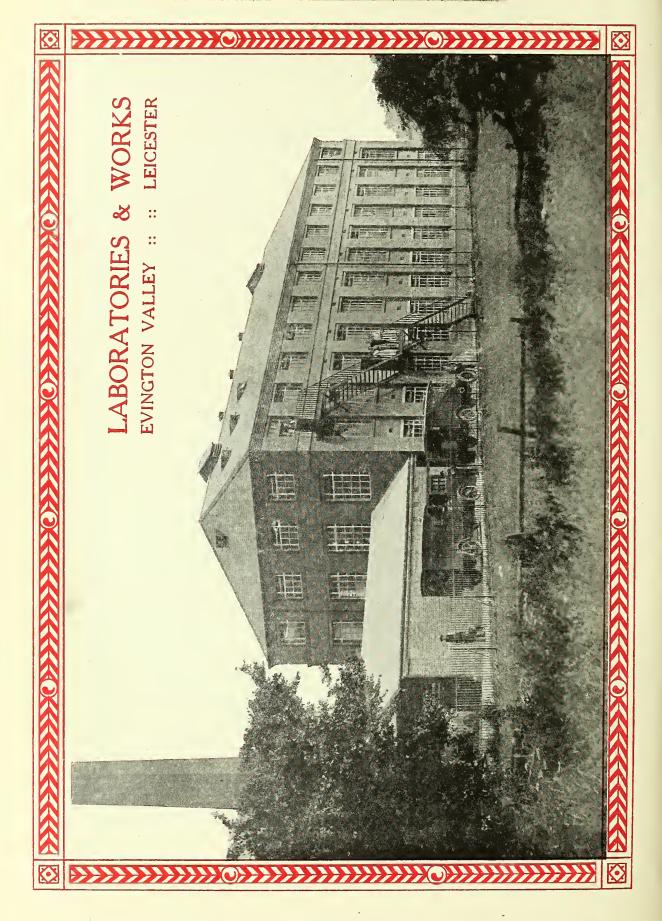
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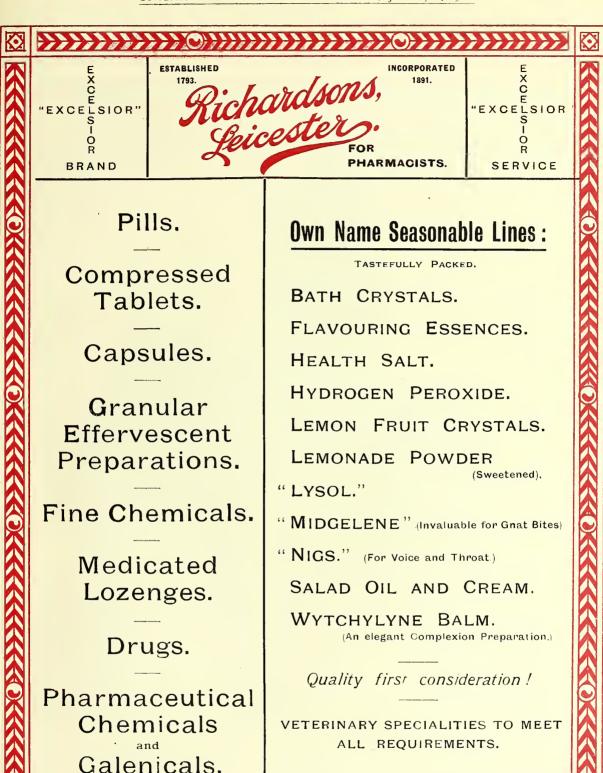
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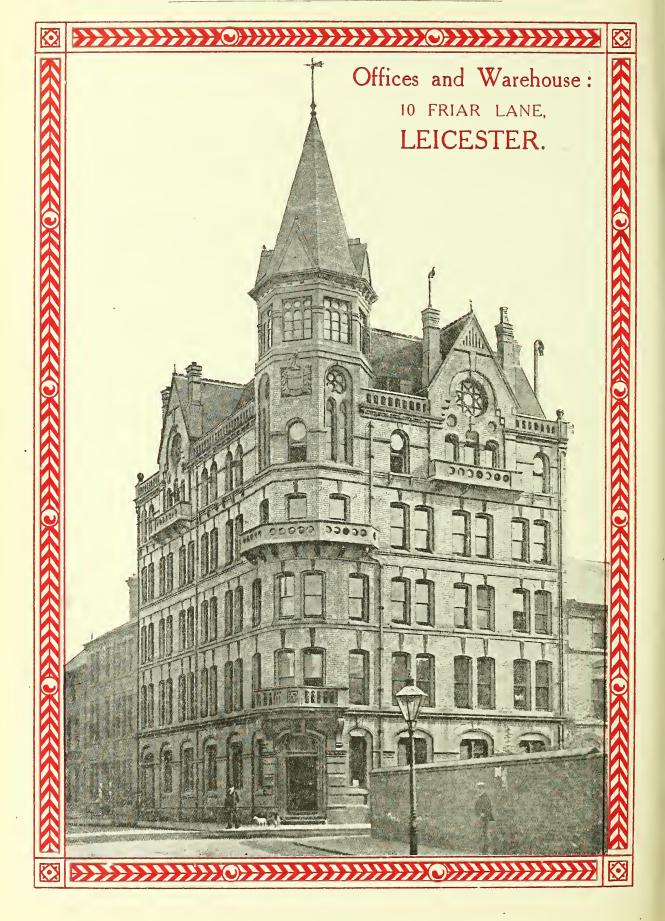
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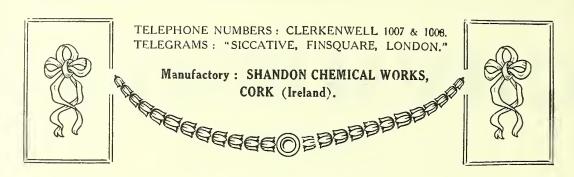
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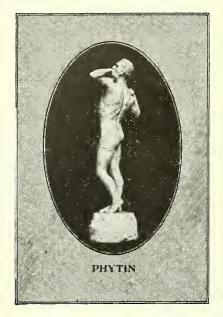
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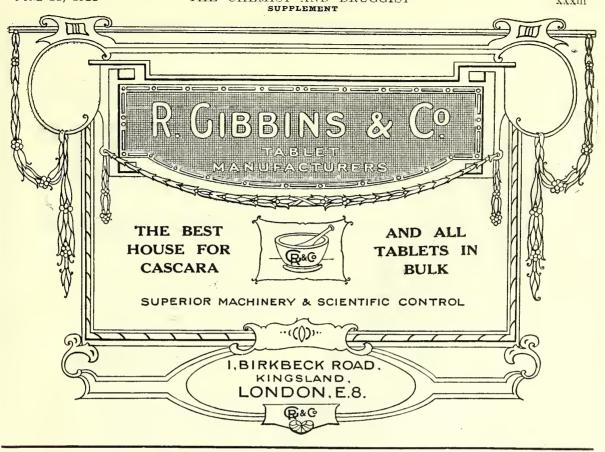
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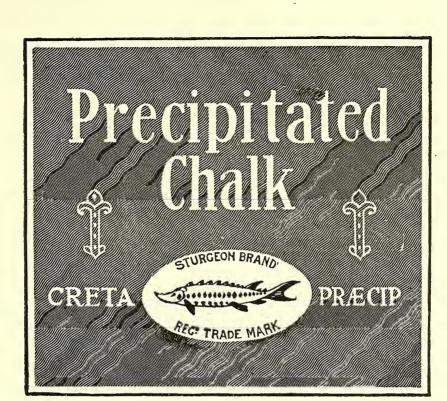
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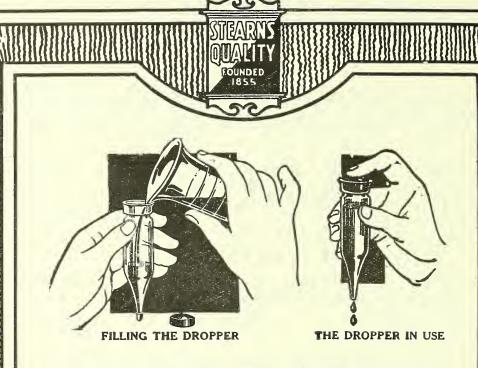
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BEECHAM'S PILLS

WHOLESALE PRICES.

Beecham's Pills:

10s. 6d. per doz. net. 1s. 3d. size 26s. 6d. 50s. 0d. 5s. Od. new size, contains double the quantity of 3/- box.

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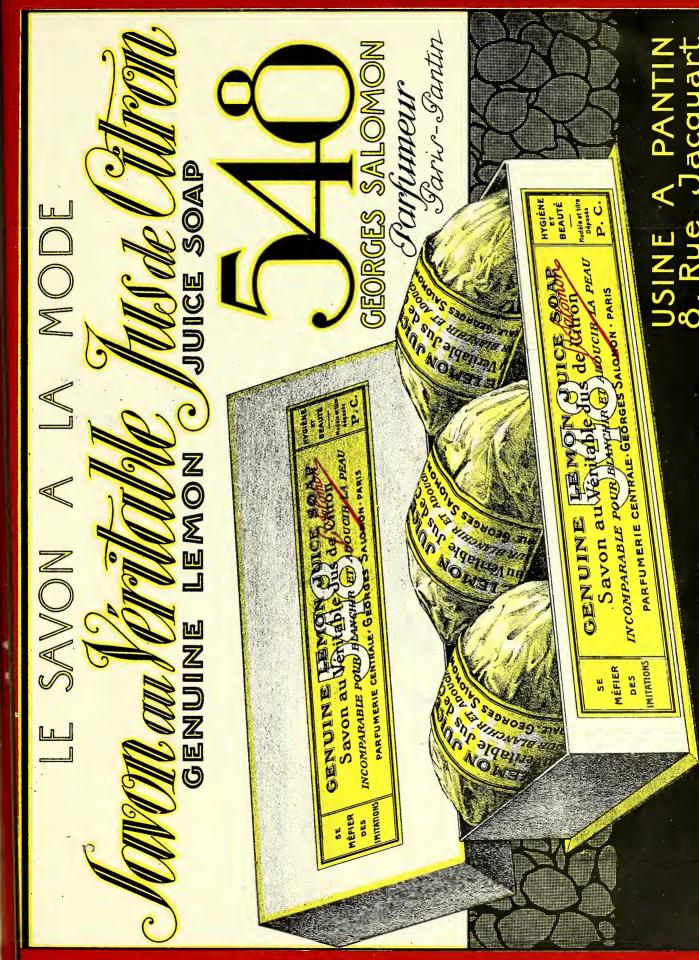
10s. 6d. 1s. 3d. size 3s. 0d. .. 26s. 6d.

Minimum quantity £5 value.

Packages FREE.

Carriage PAID. CASH WITH ORDER.

Cheques to be made payable to THOMAS BEECHAM, and crossed "Parr's Bank, Ld., St. Helens."



GENUINE LEMON JUICE SOAP

Manufactured by GEORGES SALOMON, PARIS.

Commands Large Sales

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3 TABLETS IN EACH BOX

9/6 per dozen Tablets.

SPECIAL TERMS FOR WINDOW DISPLAY:

5 per cent Discount for 6 dozen Boxes.

10 per cent Discount for 12 dozen Boxes.

CARRIAGE PAID IN GREAT BRITAIN AND IRELAND.

GOOD SUPPLY OF ADVERTISING MATTER AND FREE SHOWCARDS.
TERMS TO WHOLESALERS AND SHIPPERS ON APPLICATION.

Sole Agents for Great Britain and Ireland:

ROBERT FERBER, LIMITED,

98-104, Oakley Street, Lambeth, London S. E., 1, England.

RUDKIN'S MOTH BRICKS.

A paying Line for Chemists.

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Obtainable from all Wholesale Houses, etc.,

AND FROM THE MAKERS

ROBERT DRANE, LTD., CARDIFF.

SEE PARTICULARS OF

SPECIAL OFFER OVERLEAF.

WELL TRIED GOODS

WITH A

REPUTATION OF HALF-A-CENTURY

THOROUGHLY ESTABLISHED IN AUSTRALIA.

RETAIL

6^d.

PRICE.



PROFIT

50% ON COST.

Actual Size.

INSURANCE AGAINST THE RAVAGES OF MOTHS.

HIGH CLASS

₩

SPECIAL

TRIAL ORDER

PACKAGE.

One Gross at 48/-

CARRIAGE PAID.-F.O.B. PORT OF SHIPMENT,

Direct from the Sole Makers:

ROBERT DRANE, Ltd.,

Chemists,

CARDIFF.

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PLEASANT

AND

EFFECTIVE

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When used according to directions, are thoroughly effective for three or four years. They have been perfected by many years of experience. They may be sold with confidence. They are attractively put up, and sell at sight if given the chance. They are really the cheapest thing of their kind in the market.

P.T.O.

Citric Acid Tartaric Acid **Cream of Tartar**

"ARENELLA"

(ITALIAN MAKE)

Guaranteed to comply the requirements any Pharmacopœia or Food and Drugs Act in the World.

Carbonate of Magnesia, Light and Heavy.

Oxide of Magnesia.

Natural SUMAC EXTRACT "SAFCA"

Best Ventilated Sicily Ground 27/28 % Tannin, "STAG" BRAND SUMAC

MANNA AND MANNITE

LIQUORICE ROOT & EXTRACT

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EXPORTER OF

Fine and Heavy Chemicals

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Telephone: Avenue 2965.

FEDRILLY PREPARE SALADS MEDICINAL

House for French Pharmaceutical Preparations

THE ANGLO-FRENCH DRUG CO., Ltd. 238a Gray's Inn Road, LONDON, W.C. 1.

-PARIS, BRUSSELS, NEW YORK, MONTREAL, CAPE TOWN, SYDNEY, BOMBAY, CALCUTTA.

ALL CHEMISTS SHOULD STOCK

THE GOLD MEDAL FRUIT DRINK.

Quick Seller. Big Profits. Over 40 years' Reputation. Dank.

DUNGAN McGLASHAN, LTD., ABDINE WORKS, WESTFIELD BOAD, EDINBURGH

BLOOD - FORMING CAPSULES

(Haemog'obin, Bone Marrow and Iron)

Attractively packed for retail. Always in demand, 10/6 per dozen boxes with showcards, One dozen boxes to any chemist on sale or return.

John W. Mawson & Co. Ltd. Medicinal Capsule Makers, WEST NORWCOD, S.E.27

IORDAN ALMONDS.

WALNUT HALVES.

MUSCATELS.

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ALBUMEN. GLUCOSE.

HEN YOLKS. LEMON JUICE (English Pressed). LEMONS.

COCOA BUTTER.

GELATINE.

CONDENSED MILK, ETC.

PRODUCE MERCHANT,

15 STANLEY STREET

LIVERPOOL.

CORBYN SPECIALITIES "B & D" BRAND.



BRUNTON'S WHARF, 673 Commercial Road East, LONDON, E. 14. The following are a few of our more popular special preparations:—

CHLORODYNUM RUBRUM
ELIXIR HEXIOD
ELIXIR LECITHIN
ELIXIR BISMUTHI
SALICYLATE

ENZYME CORDIAL
EXT. CASCARA
AROMAT. LIQ.

LINCTUS TUSSI RUB.
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LIQUOR BISMUTHI RUB.
LIQUOR BISMUTHI RUB.
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LIQUOR LOBELIÆ CO.
LIQUOR PODOPHYLLIN C.
EUONYMIN

LIQUOR SANTAL CO. LIQUOR VIBURNI CO. TERPO HEROIN

We put these up in 4 oz., 8 oz., and 16 oz.

Amber Bottles.

Special Prices on Application.

Telephone: EAST 1833 (2 Lines).

Telegrams: "COLOCYNTH STEP, LONDON."

Make Summer HEADACHES help to fill your till-sell



ONSIDER "Daisy" from a thoroughly business-like point-of-view the point of view you have *got* to have to be successful to-day and you will see how wise you would be to push it *hard*.

For "Daisy" yields you from 50 to 100 per cent. of clear profit; it is easy and quick to handle; the market is big and includes nearly everybody; and it is advertised so heavily and so well that your every "headache" customer will accept it gladly.

We have some attractive new display matter—bills and showcards—that are worthy of a place in the most exclusive pharmacy and put "Daisy" on an altogether higher plane. With every order we will send a generous supply of this strong selling matter, so enabling you to make a money-making display with no trouble at all. And every inch of display space you give to "Daisy" will put silver in your till.

Every day "Daisy" gets more and more users, more and more people learn how safe yet how quickly effective it is. They are passing your window every hour. Let them see that you have "DAISY" and into your store they'll come.

Quick, easy, big-profit sales are what every chemist wants. "Daisy" offers them to you to-day. Will you take them?

Terms

1/- Packets each containing 8 powders—Minimum Retail Price, 1/-; Sample Powder 2d. For not less than 1 doz. Boxes, 9/9 per doz. For not less than 3 doz. Boxes, 9/2 per doz. 2/3 Packets each containing 20 powders—Minimum Retail Price, 2/3. For not less than 1 doz. Boxes, 21/6 per doz. For not less than 3 doz. Boxes, 20/6 per doz. Mixed Orders for 1/-, 2/3, 6/- size and for "Daisy" Tablets on best terms. Discount 7½ per cent. for cash. Carriage Paid to destination. From all Wholesalers or direct.

Order your season's supply of "DAISY" to-day, and let others suffer from the slump

Daisy Ltd., Leeds



the demand—you meet it.

"Grips" are packed in dainty 5-lb. tins to retail at 10d. per quarter, and also in neat, handy-sized pocket tins to retail at 1/- each. These are the advertised prices.

Send now for particulars of Liberal Trade Terms.

GET TO KNOW

LINK your shop to the great "Grips" Advertising Campaign and ensure your share of the "Grips" trade that will be created in your district. Large advertisements will appear in the leading newspapers and periodicals throughout the country.

Winter is coming, and winter-time is "Grips" time. Be enterprising -stock-up with "Grips" and keep your cash register ticking "shillings" all day long. You can stock "Grips" with confidence; the Advertising Campaign will send the customers to your counter.

Window sheets, cut-outs, showcards, dummies, etc., supplied freely. Expert information on window dressing is at the service of all chemists who sell

AGENTS FOR THE WHOLESALE AND RETAIL CHEMIST TRADE.

Thos. Christy & Co., 4-12 Old Swan Lane, London, E.C. 4.

99%
Profit on
CEPHOS

The Safe, Certain & Scientific Remedy

Headache, Neuritis, Neuralgia, Rheumatism and Influenza

Study these liberal Trade Terms:

Minimum Retail Price 1/3 and 3/-. Price to you per doz. 12/- and 30/-. Bonus of 10/- on £5 worth for fourteen days' window display.

*Loose Powders retailed at 2½d. each yield 99% profit.

Good, forceful advertising is creating a national demand for "CEPHOS." Stock NOW and ensure your share of the big business.

Send Postcard for Sales-compelling Window and Counter Material,

Cephos Ltd., Blackburn.

Sole Distributing Agents for ALL territory outside Lancashire and Yorkshire:

THOS. CHRISTY & CO.,

4/12 Old Swan Lane, LONDON, E.C.4

IMPORTANT TO CHEMISTS

WITHOUT LICENCES.

VIN. FERRI CITRATIS, B.P.

Bottles 32/- doz.; $\frac{1}{2}$ -bottles 18/- doz.

Liebig's Beef & Malt Wine

(with QUININE)

Bottles 40/- doz.; $\frac{1}{2}$ -bottles 21/- doz.

Quinine Wine, B.P.

Bottles 21/- doz.; ½-bottles 11/6 doz.

It has been established by law that Registered Chemists may sell all the above without a licence.

Carriage paid on 3 dozen orders.

B. ROBINSON & Co., Ltd

PENDLETON

MANCHESTER.

Phone: 138 Pendleton. Telograms:
"Champagne Manchester."

RADIUM COMPOUND.

SELF-LUMINOUS

Highest Possible Efficiency, Durability & Value.

As supplied to H.M. Government, &c. Guaranteed to pass N.P.L. requirements. All Grades in stock, from 15/- per gram. RADIUM SALTS TESTED AND CERTIFIED.

F. HARRISON GLEW, THE RADIUM

156 Clapham Road, London, S.W.

ELDERFLOWERS

We are booking orders for freshly pickled and dried, and can deliver in a few days.

NEW SEASON'S HERBS

NOW READY: Speedwell Clivers, Plantain, Dandelion, Chickweed, Groundsel, Fumitory, Nettles, Avens, etc. Orders booked for Wild Carrot, Meadowsweet, Yarrow, etc., for delivery as collected. For full list apply—

FLEMONS & SONS Wholesale Herb Merchants, DUNSTABLE.

Guaranteed Relief or MONEY BACK



For Rheumatism, Lumbago, Neuritis, Gout, Sciatica, and all other Uric Acid Complaints.

A Nationally Advertised Line that pays Retailers 25% on a steady increasing sale. Send now for Special First Stock Parcel: 1 doz. 3/- size, 1 doz. 5/- size, ½ doz. 12/- size. Any quantity Carriage Window Display Terms on ion. All Wholesalers stock Application. PHYSIKURATE.

On P.A.T.A. List

As advertised, any dissatisfied customer will receive money back on applying direct—this saves you from trouble and ensures your recommendation and profit.

PHYSIKURATE, Ltd., 92a Upper Clapton Road, LONDON, E.5.

WORKS WHILE YOU SLEEP

Dr. Bengué's Ethyl Chloride for Local and General Anaesthesia in Glass and Metal tubes.

Large selection of tubes.

Anestile for Local Anaesthesia.

Narcotile for General Anaesthesia.

Methyl Chloride.

Ask for Special Terms and Showcards for Dr. Bengué's Balsam.

Dr. BENGUÉ & CO., MANUFACTURING CHEMISTS.

52 Charlotte St., LONDON, W. 1.

NURSE HARVEY'S MIXTURE

A safe, simple, and reliable remedy for Children's Ailments is advertised so extensively in the daily and weekly Press as to bring mothers to the retailer without effort on his part.

The selling has been done before the mother reaches the chemist, and, having supplied her, it is only common sense to claim she will buy other family necessaries from him. Moreover, the retailer has a profitable return on a quick turnover.

For Direct Terms apply to-

OSCAR SCRUTON & CO., YORK

DR. DE JONGH'S LIGHT OWN CODIIVER

Has over a period of upwards of sixty years thoroughly proved its therapeutic value, as may be shown by the recommendations of some of the most eminent men in the medical profession who have prescribed Dr. De Jongh's Light Brown Cod Liver Oil in preference to any other.

The greatest care has always been taken to use only the natural and purest Norwegian Oil obtainable, and this care has undoubtedly enabled the proprietors to offer a Cod Liver Oil which contains in the highest degree the Fat-Soluble Accessory Factor (commonly known as Vitamine A) which is proved to be of material potency in dietary

The following extract from *The Lancet*, dated February 12, 1921, in a note on the relative activity of the Fat-Soluble Accessory Factor, by S. S. Zilva, D.Sc. Lond., Ph.D. Giessen, F.I.C., and D.Sc. Lond., Ph.D. Giessen, F.I.C., and Masataro Miura, M.D. Tokyo (from the Biochemical Department, Lister Institute) is of the greatest interest in connection with the above remarks.

"In this investigation we had the opportunity of testing a variety of substances and we were struck by the extremely high potency of cod liver oil. This was specially marked in the case of a sample of crude unrefined cod liver oil, which was found to be 250 times as potent as butter. The samples of refined cod liver oil which we examined, although not so active as the crude oil, were also far superior in their activity to butter. It is our opinion that this superiority in potency of cod liver oil to other substances is responsible for the remarkable results achieved with it therapeutically. Unfortunately, in order to satisfy the requirements of the public there is a great tendency to produce brands of cod-liver oil which appear almost colourless. Inorder to achieve this, very of testing a variety of substances and we were almost colourless. Inorder to achieve this, very drastic means may often be employed which conduce to the partial or even total destruction of the accessory factor. In this connection one may point out the great instability of the fat-soluble factor when exposed to air (Hopkins, 1920, Drummond & Coward, 1920) and ozone (Zilva 1920), the latter substance being very often employed as a bleaching agent in many indus-tries. It is hardly necessary to point out the serious consequences which might arise if in the process of refining this exceptional activity of the cod-liver oil were to be vitiated or destroyed in the manipulation of certain preparations.

The greatest care has always been taken by the Proprietors to ensure that no process in the preparation of Dr. De Jongh's Light Brown Cod Liver Oil can conduce to the destruction either partial or total of the accessory factor.

Dr. De Jongh's Light Brown Cod Liver Oil is a Pure Natural Oil obtained only from fish caught in the region of the Lofoden Isles off Norway, and there is no Cod Liver Oil which has yet been shown to be more rich in "Vitamines." A than that procured from livers of the fish found feeding on the abundant vegetation in these seas.

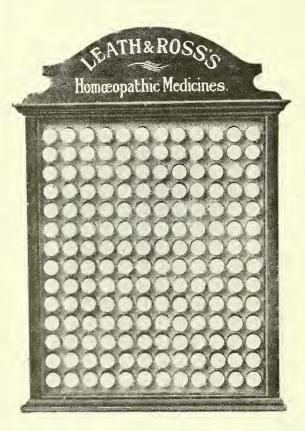
So'e Proprietors and Consignees:

ANSAR HARFORD & CO., Ld. 182 Gray's Inn Road, LONDON.

"Necessity knows no Law"

Therefore you must have one of these handsome Showcases in your Pharmacy, because

They are a real Necessity.



Dimensions of the Case, Height (Including) 26 in.

Width 19 ,,

Depth - 6 ,,

We supply them on the following most advantageous terms, viz.:

2 gross 1/- assorted Pilules and Tinctures, @ 4/6 per doz. 5 8 0

Half cost of S h o w c a s e costing £3 ... 1 10 0 6 18 0

10 % monthly a/c 13 10

Or Cash with Order

£6 net.

You can choose your own medicines, or leave the selection to us. We should send the best selling lines only, and agree to exchange any within twelve months, FREE OF CHARGE.

Mr. HAROLD HAW, M.P.S., 5 Albert Terrace, Blackpool, writes: "SIRS—Showcase to hand safely; very satisfactory; has already been admired by several chemist friends."

September 13, 1921.

LEATH & ROSS,

Homœopathic Chemists,

(Qualified by Examination)

295 High Road, Brondesbury, LONDON, N.W. 6.

Have you any Asthmatical Customers

who have had little or no relief from any remedy previously tried? If so, recommend them to try Hinksman's Asthma Reliever.

The effect of Hinksman's is instantaneous, and it brings complete relief in from two to five minutes. Hinksman's also lessens the number and severity of the attacks, and there is more than sufficient evidence to show that sufferers who use it persistently can take all the sting from this distressing complaint.

The prices of Hinksman's Asthma Reliever are: Powder, Cigarettes, or Smoking Mixture, 14/- per dozen, and 13/- per dozen in gross lots, to retail at 1/6 each. Your profit is fully 28% and 38% on your outlay.

Orders, assorted to meet customers' requirements, are obtainable through all wholesale chemists, or direct from the manufacturers, who guarantee retailers from all loss from unsold or damaged stock.

HINKSMAN'S ASTHMA INOKING NIXTURE Pree The diate relief of BRONCHITIS, TING COUGH, OF BREATH, etc. OF BR

On P.A.T.A. List.

Free Samples to give to sufferers sent on request.

HINKSMAN & FORREST, Ltd.

Manufacturing Chemists,

CARLUKE, SCOTLAND.



size. 5 oz.	Trial	 	 	M.R.P. 2 /-	 M.W.P. 18/-
$10\frac{1}{2}$,,	Small	 	 	3/-	 27/-
$17\frac{1}{2}$,,	Medium	 	 	5/-	 45/-
$34\frac{1}{2}$,,	Large	 	 	8/6	 76/6
5 lb.	Hospital	 	 	17/6	 157/6

Prices for IRELAND, CHANNEL ISLANDS, ISLE OF MAN: Less value of stamps, Wholesale and Retail.

For best terms, carriage paid, write to the Sole Agent-

J. F. MURPHY, 41 St. Ann's Road, LONDON, E. 3.

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DO YOU SELL

Treatment?

This consists of Bath Salts, Ointment and Tablets, each selling for one shilling, and showing on best terms about 100% profit.

The Bath Salts are absolutely the best on the market, and their pleasing fragrance induces quick repeat purchases by users.

The triple treatment itself is spoken of most highly by sufferers from gout, rheumatism, neuritis, etc. Remember that sufferers from these troubles are always anxiously seeking a cure, and your recommendation of Neuritol will bring you grateful customers and ready advertisers.

A TRIAL PARCEL of 3 dozen 1/- Neuritol Treatment will be sent carriage and packing free, with handbills, etc., on receipt of your cheque for one guinea.

Sold by qualified chemists only.

PIERSON, MORRELL & CO., Ltd.

The Original British Aspirin Makers.
100 Queen's Road, BARNET

Telephone: Barnet 723. Telegrams: "Pierson Morrell, Barnet."



KNOWN ALL OVER WORLD AS STANDARD LIQUID PLASTER.

TRADE PRICES.

Retail Price.	Trade Price
10½d. Pocket Size	8 / 5 doz.
2/- Medium Size	19/2 ,,
3/- Physician's Size	28/9½ "
£3 and up Carriage P	aid.

Order through your wholesaler or direct

Sole Agent for British Isles and Colonies-

J. E. GARRATT, 96 Southwark Street, London, S.E.1.

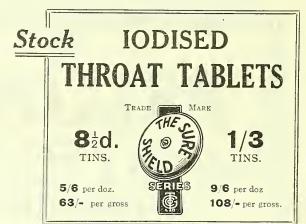


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INCREASED SALES





THOS. GUEST & CO. Ltd., Carruthers St., ANCOATS, MANCHESTER.

One 82d. tin sent free, on request, to any Chemist.

MONEY IN

if you buy from us at these advantageous prices



Pot. Bicarb. 11d.,, Pot. Nit. Com. ... 6d. ,, Sod. Salicyl. Sod. Brom. Ammon. Brom.... Pot. Brom. Beeswax ... 1/8 Spermaceti Senna Pods Comp. Licorice Powder Henna Powder ...

Reduction for larger quantities. Drugguaranteed B.P., unless otherwise stated.

SEND FOR LISTS AND TERMS-

MFG. CHEMISTS.

Chorlton-cum-Hardy, MANCHESTER.

1) 10 10 11 NDSOFE Anstavan.

New Prices

for Chatelain's Preparations.

Urodonal

Sells in Bottles at 5/- and 12/
PRICE LIST.

Public (Singles) Per Doz.

\$\frac{1}{2}\$ \$

	_	_			•					
	Public	(Chemi per D		1		Public (Singles)	•	Chemi per D	
	(Singles)	£	per L	d.			(Singles)	£	S.	d.
URODONAL (large)	12/-	5	15	$2^{rac{1}{2}}$		Filudine (small)	3/-	$\widetilde{1}$	8	$9\frac{1}{2}$
Pagéol (large)	12/-	5	15	$2\frac{1}{2}$		Furosyl	3/-	1	8	$9\frac{1}{2}$
Vamianine	12/-	5	15	$2\frac{1}{2}$		Globéol (Pills)	3/-	1	8	$9\frac{1}{2}$
URODONAL (small)	5/-	2	8	0		Gyraldose (small)	3/-	1	8	$9\frac{1}{2}$
Fandorine (large)	5/-	2	8	0		" (Powder)	3/-	1	8	$9\frac{1}{2}$
Filudine ,,	5/-	2	8	0		,, (Ovules)	3/-	1	8	$9\frac{1}{2}$
Gyraldose ,,	5/-	2	8	0		Linycol	3/-	1	8	$9\frac{1}{2}$
Globéol (liquid)	5/-	2	8	0	1	Poral	3/-	1	8	$9\frac{1}{2}$
Noctyl	3/-	1	8	$9\frac{1}{2}$		Poralin	3/-	1	8	$9\frac{1}{2}$
Pagéol (small)	5 /-	2	8	0		Romanyl (tabs)	3/-	1	8	$9\frac{1}{2}$
Rucoval (large)	5/-	2	8	0		,, (liquid)	3/-	1	8	$9\frac{1}{2}$
Sinubérase (bottles)	5/-	2	8	0		Sinubérase (tubes)	3/-	1	8	$9\frac{1}{2}$
JUBOL	3/-	1	8	$-9\frac{1}{2}$		Succine	2/-		18	3
Jubolitoires	3/-	1	8	$9\frac{1}{2}$		Gyraldose Soap	1/3		12	0
Jubolitan	3/-	1	8	91		Fogyl	2/-		19	3
Dialirol	3/-	1	8	$9\frac{1}{2}$		Rhino-Fogyl	1/3		12	0
Ext. Biliaires	3/-	1	8	$9\frac{1}{2}$		Corivore-Plaster	1/3		12	0
Fandorine (small)	3/-	1	8	91						

Chatelain's Preparations are on the P.A.T.A. list and show a clear profit of 20%

From Sangers', May, Roberts', Butler & Crispe, Wilcox, Jozeau & Co., F. Newbery & Sons, and all Wholesalers.

For Price List and Terms write to the Sole Agent for the U.K.: M. E. BOUSSARD.

7 Paddington Street, London, W.I.

The ideal form of iodine for external use.

Does not irritate or stain the skin!



Constantly and extensively advertised to the Medical Profession who use and prescribe it regularly in cases of stiff and swollen joints, rheumatism, synovitis, enlarged glands, strains, bruises, septic wounds and inflamed conditions generally.

Iodex is P.A.T.A. and face value. On best terms it shows a profit of nearly 30%. Are you getting your share of this profitable business?

****ASPIRIN TABLETS IN SANITAPE

We are now issuing Aspirin Tablets for Chemists' Own Name trade in the new packing, Sanitape, for those who prefer this newer style. Samples, showing the attractive cartons used, will be gladly sent on request.

MENLEY & JAMES, LTD., Manufacturing Chemists, HATTON GARDEN, LONDON, E.C. 1,





Obtainable from all Wholesalers.

Dinneford's Magnesia

has been placed upon the

P.A.T.A. Protected List

at the following prices:

Minimum Retail

1/3 2/6 Minimum Wholesale

10/6 per doz. net. 21/- " " "

(Minimum Quantity, **£6** assorted). Carriage Paid.

Dinneford's Magnesia

The MINIMUM of Selling Force is necessary.

It sells itself. Being so well advertised to the general public the sales are progressive and repeats regular, so that the

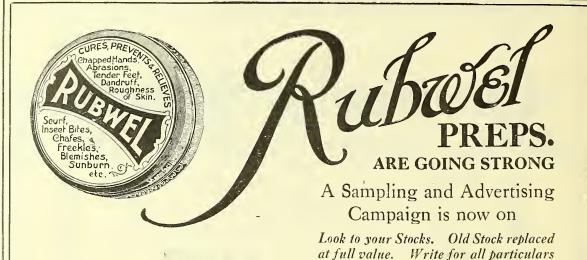
PROFIT ON SALES

compares well with that of any other medicinal proprietary.

DINNEFORD & CO. LD.

12 Clipstone Street, London, W.1.

Telephone: MUSEUM 1776.



WINDOW DISPLAY TERMS FOR SPECIAL

Rubwel Ointment. 4d., 9d, 1/3

Vetz Ointment (VETERINARY) 1/3

Rubwel Co., Ltd. PENDLETON, MANCHESTER

PYORRHEA.—One of the most prolific sources of the ills to which flesh is heir to, its ravages have become a matter of first-class medical importance.

PREVENTS AND CURES PYORRHEA

A dentifrice prepared on the scientific basis reported to the Medical Conference at Rouen in August 1921, by Dr. B. Kritchevsky, Joint Professor of the French School of Stomatologie, Paris, and Dr. B. Seguin of the Pasteur Institut of Paris.

It is strongly recommended for rapidly combating Pyorrhea alveolaris, Mercurial Stomatitis, Gingivitis, Scurvy, and successfully preventing and curing mouth infections.

Most convincing results have been obtained by the Dental Profession of Great Britain, France and

"Dr. Kritchevsky is to be congratulated upon his services, not only to the Dental Profession, but to the public at large, and there can be no doubt that his preparations may be conscientiously recommended.' The Dental Surgeon, Feb. 18, 1922.

Sole Representatives for the British Empire:

SEALAND TRADING, Ltd.

Buchanan Buildings, 24 Holborn, LONDON, E.C.1

Sold by all Chemists and Druggists 2/6 per tube.

HARROGATE TABLET COMPANY'S

I. Dr. Stork's Worm Cakes (See June 3rd)

II HARROGATE

HEALTH GRANULES.

Every Chemist likes to think that the lines he sells to his customers are the best on the market. Our Health Salts are also unique; they have that extra little touch which is so difficult to define, but which adds distinction. As Harrogate is famous for its Sulphur Water and Baths treatments, you will find your customers will be attracted by Sulphurtown Health Granules.

Packed in air-tight lever lid tins, lined with greaseproof paper.

Price 7/- per dozen. 80/- per gross.

HARROGATE TABLET CO., Ltd.

CHATSWORTH GROVE,

HARROGATE.

For Perfection of Finish

in

CATHETERS, BOUGIES, PROBES

and other Gum-elastic and India Rubber Surgical Specialities



PORGÈS

is famous the world over. Read this booklet carefully



The CATHETERS and BOUGIES shown in this catalogue are a novelty of the highest interest in the industry of ELASTIC gum urinary instruments and have been manufactured to suggestions made by eminent specialists.

Woven of a special unbreakable silk, and covered with a new composition, they offer the

strongest possible resistance to all modes of sterilization, especially to boiling.

Their **flexibility** is remarkable. The inside is covered solidly and entirely with our grey gum, rendering them impenetrable and preventing stagnation and infiltration of urine in the woven tissue.

The eyes of the Catheters are large and considerably strengthened at the edges, which are well rounded off.

The surface is quite smooth and perfectly regular;

Climatic influences do not affect our grey gum. The material employed in their fabrication prevents all softening, sticking or deterioration and even in the **tropics** our grey instruments will keep in **perfect condition**.

The contact of urine, whatever its composition may be, never affects the gum coating. These Catheters are consequently permanent Catheters par excellence, never showing any roughness

even after remaining in the bladder for sometime.

By employing very fine silk for the webbing, the largest possible interior diameter is obtained, and consequently our grey Catheter may be advantageously used for effective Bladder irrigation.

The metallic aspect is characteristic, justifying the name of « flexible metal ».

In short, this new Catheter, the result of many years ardent research, is one of the most useful aids to the practitioner.

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nt	oiling, large ns	Silk tissue	expenses extra	Forwarding	99/-	7/6	80/-	66/-	45/-	36/-	27/-	54/-	45/-	30/-	30/-	33/ <u>-</u>	36/-	90/-	30/-	30/-	30/-	Dozen	TO THE TRADE ONLY

The CATHETERS and BOUGIES shown in this catalogue are a novelty of the highest interest in the industry of ELASTIC gum urinary instruments and have been manufactured to suggestions made by eminent specialists.

Woven of a special unbreakable silk, and covered with a new composition, they offer the

strongest possible resistance to all modes of sterilization, especially to boiling.

Their flexibility is remarkable. The inside is covered solidly and entirely with our grey gum, rendering them impenetrable and preventing stagnation and infiltration of urine in the woven tissue.

The eyes of the Catheters are large and considerably strengthened at the edges, which are well rounded off.

The surface is quite smooth and perfectly regular;

Climatic influences do not affect our grey gum. The material employed in their fabrication prevents all softening, sticking or deterioration and even in the **tropics** our grey instruments will keep in **perfect condition**.

The contact of urine, whatever its composition may be, never affects the gum coating. These Catheters are consequently permanent Catheters par excellence, never showing any roughness

even after remaining in the bladder for sometime.

1922

By employing very fine silk for the webbing, the largest possible interior diameter is obtained, and consequently our grey Catheter may be advantageously used for effective Bladder irrigation.

The metallic aspect is characteristic, justifying the name of « flexible metal »

In short, this new Catheter, the result of many years ardent research, is one of the most useful aids to the practitioner.

Nº 956. — GREY CYLINDRICAL CATHETER

Brevetée S. G. D. G.



This Catheter is employed for evacuation of the bladder in cases of simple stricture.

— The Catheter shown above is enclosed in an aseptic envelope —

ASEPTIC ENVELOPE

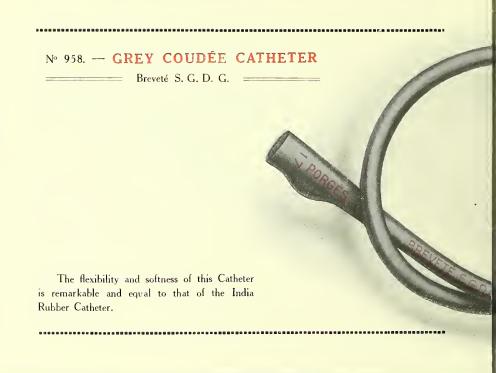
for Catheters, Bougies, Pipes, Drainage Tubes - Modèle PORGÈS, Breveté S.G.D.G.

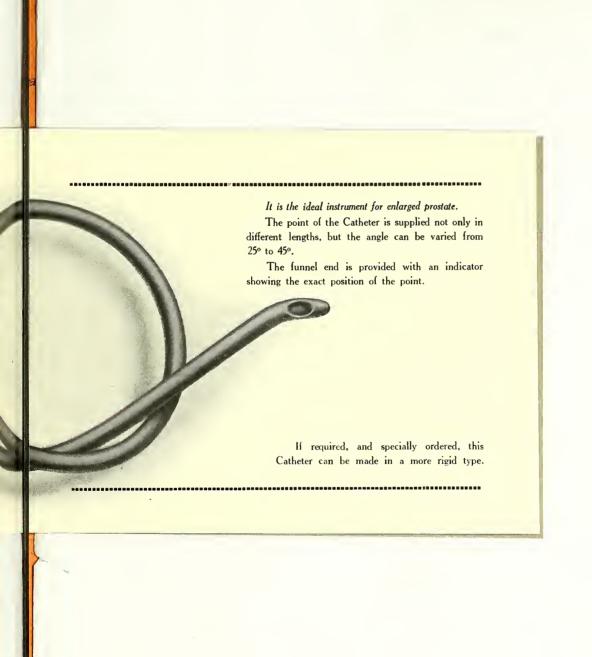
Our aseptic envelope, of transparent impermeable material, hermetically sealed, contains a disinfectant product (for preference trioxyméthylène pastilles) and has the great advantage of maintaining its contents permanently sterilized.

Our new device enables us to supply to the user an article perfectly aseptic and ready for use. It offers more-over the appreciable guarantee that the instrument has never been used, or spoilt by exterior contact. Instruments contained in our **Aseptic Envelope** are kept in a state of preservation for any length of time.

Care should be taken to wipe the Catheter, before use, with cotton soaked in sterile water.





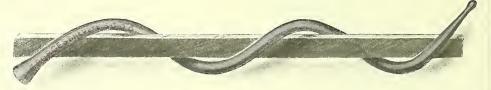


Nº 960. — GREY A BOULE BOUGIE

Breveté S. G. D. G.

For gradual dilatation of the urethra

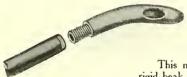
This Bougie, although specially flexible throughout, is quite firm, and is particularly recommended for dilating a sensitive urethra.



This illustration proves the great advantage of our grey composition. The Bougie adapts itself to all curves, without danger of peeling or cracking, of the glazed surface.

Nº 958 bis. — GREY COUDE CATHETER WITH METALLIC DETACHABLE END = Breveté S. G. D. G.

The Coude removable end is made of silver.



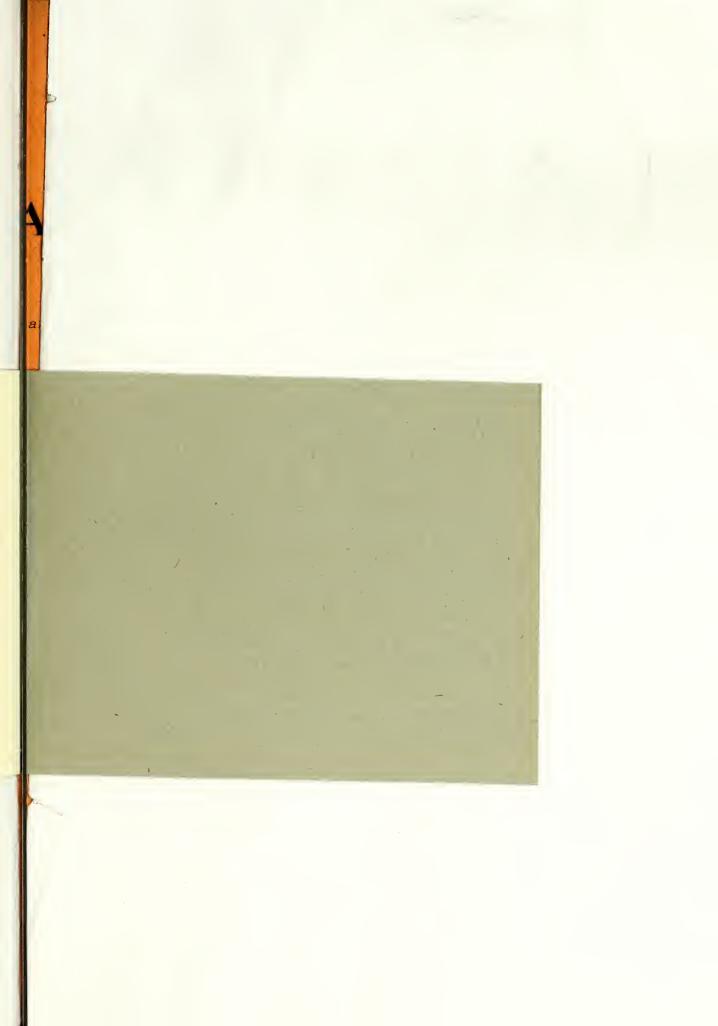
This modification prevents the rigid beak bending in case of heavy pressure on a big prostate.

The metallic end moreover protects this part more exposed in use.

A set of various curves for different cases may be screwed on the Catheter.

This particular type of Catheter makes an excellent instrument for diagnosing calculus. This Catheter is made **only** in the sizes 18-19-20 French Gauge (other sizes only on special demand.

GREY URETHRAL CATHETERS for Brevetées S. G. D. G.	or Radiography
Owing to the metal material which is in our grey compos f great opacity.	
	We make :
	Modele A (a boule end)
В	Nº 959 bis.
	Modèle B (Cylindrical end)
A	Modele A (a boule end)
	Graduated in centimeters red
	N° 959 ter.
В	Modele B (Cylindrical end)
	Graduated in centimeters red









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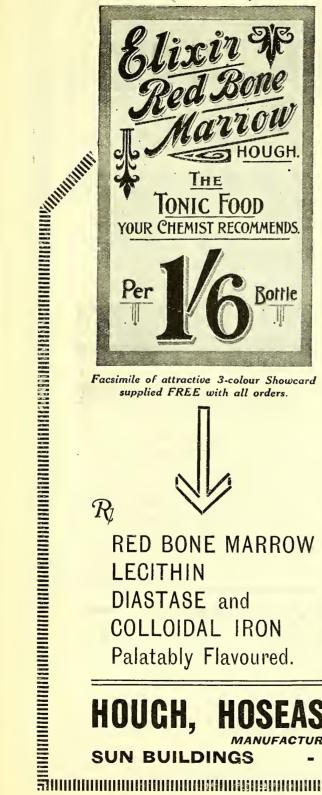
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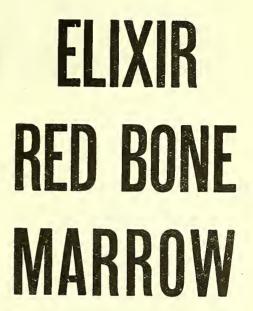
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No sugar required.

Each bottle contains sufficient tablets to make 12 glasses of Lemonade. Shall we send you a free Sample bottle?

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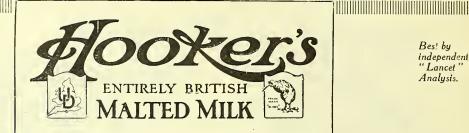
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Prices and Terms on application to R. BARKER & SON, Ltd. 13 Wesley St., C.-on-M., MANCHESTER.

VITAMINES.

EVERY PHARMACIST to-day is being asked for preparations rich in Vitamines. Our research bureau foresaw this demand years ago, and our product stands alone as an old-established, well-tried and proven Vitamine-Rich Food.

It is extremely palatable and easily assimilated. It is valuable as a Nerve Tonic and as a repairer of Waste Tissues. As a deterrent, where there is a tendency to Rickets or Dental Caries, it is unequalled.

has the approval of the medical profession, by whom it is now prescribed on an ever-increasing scale. It is packed in two sizes, 2/9 and 5/9, obtainable from all the principal Wholesale Houses.

The latest literature on Vitamines sent on request.

Sole Manufacturers:-VITAMOGEN, Ltd., Dept. C, 24/26 Holborn, E.C. 1.

RUDDUCK &

Shop Fitters and Shop Front Builders,

CLERKENWELL 3171. 262, OLD STREET, LONDON, E.C.2.



This Illustration represents:-

DISPENSING SCREEN & COUNTER

6ft. long by 6ft. high (about),

Description of Counter:-

Mahogany Top Counter with O.G. Nosing, Two Mahogany and PLATE GLASS Show Cases in Front, fitted with Shelves, with PLATE GLASS projecting Sponge Case in centre, attractively Lettered TURKEY SPONGE.

Description of Screen:-

Mahogany with PLATE GLASS Bevelled Mirror in centre, with PLATE GLASS Show Case each side, fitted inside with PLATE GLASS Mirror Back, and Movable Plate Glass Shelves, usual Shelves at back of Screen.

Price £37 10s.



This Illustration represents: - Mahogany and PLATE GLASS COUNTER CASE, 6ft. long by 18in. wide. PLATE GLASS Ends, PLATE GLASS Mirror Flaps at back with Spring Catches, Mahogany Display Shelf with serving place in centre, fitted inside with Velveteen Lined Trays. Price £17 10s.



No. 2.

This Illustration represents:

CHEMISTS' FITTING.

12ft. long by 9ft. high, with 60 Solid Mahogany Fronted Drawer's with Cut Glass Knobs and Bevelled Edge Glass Labels with Lockers under same, Mahogany faced cover Board over Drawers, Mahogany faced Shelves with Mahogany Pilasters and Mahogany Cornice over Top.

Price £55



No. 4.

This Illustration represents:-

CHEMISTS' COUNTER

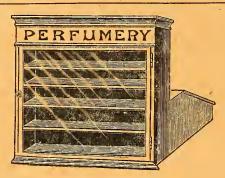
10ft. long by 2ft. wide by 3ft. high, Solid Mahogany Top with O.G. Nosing, Mahogany and **PLATE GLASS** Show Case in Front, fitted with Movable Shelves.

Price £35

RUDDUCK & COMPANY.

Complete Shop & Office Fitters, Shop Front Builders, &c.

262, OLD STREET, LONDON, E.C. 2. Telephone: CLERKENWELL 3171.



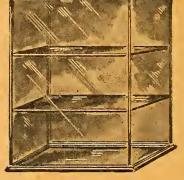
This Illustration represents:-Perfume Case and Desk, 24in. wide by 2ft. 6in. high, Mahogany and PLATE GLASS Case, Lock and Key, Movable Plate Glass Shelves, and Plate Glass Mirror back, attractively lettered **PERFUMERY**, Mahogany Desk with lift up Flap, Lock and Key, Stamp Drawer, &c., inside.

Price £12

No. 11. This Illustration represents:-

UPRIGHT SHOW CASE to stand on floor AIR-TIGHT made in Mahogany, Oak, or other hard wood, well French Polished, Glazed PLATE GLASS throughout, with Door to open. Fitted inside with 3 Movable Plate Glass Shelves (with polished edges), on Adjustable Brackets. 6ft. high by 2ft. wide by 2ft, back to front.





No. 10.

This illustration represents:-

UPRIGHT SHOW CASE (to stand on counter) AIR TIGHT, made in Mahogany, Oak, or other hard wood, well French Polished, Glazed **PLATE GLASS** throughout with door to open at back. inside with 2 Movable Plate Glass Shelves polished edges), on Adjustable ets. Size 33 in. high by 24 in. wide Brackets. by 22 in. back to front.

Price £13 10s.

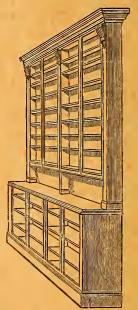
No. 3. This Illustration represents :-

CHEMISTS' WALL CASE

8ft. long by 9ft. high, upper part from 6in. to 7 in. deep, lower part from 13 in. to 15in. deep, fitted with Movable Shelves, Mahogany Sashes, Recess Top, Pilasters, and Cornice.

Glazed Stout Sheet, Price £35

Glazed ¹/₄ Plate, Price **£40**



N.B.—Large Quantity Second-Hand Show Cases (High-Class only) always on hand. Show Cases lent out on Hire.

<mark>edeceptato de la companida de la composición del composición de la composición de la composición de la composición de la composición del composición de la </mark>

Telephone: NEW CROSS 468.

Telegrams: "DENOUALS PECK LONDON."

Established 1859.

JULES DENOUAL & CO.

Wholesale and Export Manufacturers of

REGISTERED

JD

TRADE MARK.

Medicinal Capsules, Medicated Lozenges, Pastilles, Jujubes, Cachous, etc.

PASTILLES & JUJUBES.

PREPARED with a basis of finest quality Gum Acacia, Glycerine and Sugar. Owing to our special method of coating, our Pastilles and Jujubes do not stick together, and they retain their bright appearance.

Special formulæ made up into Pastilles. Quotations on demand. We supply all Medicated Pastilles in two varieties, viz.: Bright coated or Crystallized, as desired. Where variety is not specified on order, we send the one most in demand.

Our Glycerine and Black Currant Pastilles are prepared from the fresh fruits and picked Gum Acacia. There is no starch or gelatine in them, and the flavour and efficacy of the fresh fruits are combined with the demulcent properties of the pure glycerine which they contain. The ingredients are not only the best in quality and most approved in nature, but the Pastilles are produced in elegant manner.

己

2/6 per lb.
Packages
included.

Per lb. 28 lb. @ 2 4 56 lb. @ 2/2 1 cwt. @ 2/-

Glycerine, Honey and Lemon Juice Glycerine and Paregoric ... Glycerine and Tannin... ... Licorice, Menthol and Eucalyptus ... Linseed, Licorice and Chlorodyne ... Menthol Menthol and Eucalyptus Menthol, Eucalyptus and Pine Oil ... Paregoric and Glycerine ... Pine Oil, Menthol and Eucalyptus ... Pynoline (Pine, Creosote, Cajuput, etc.) Tannin and Glycerine

2/6 per lb.

Packages
included.

Per lb. 28 lb. @ 2/4 56 lb. @ 2/2 1 cwt. @ 2/-

Medicated Pastilles and Jujubes packed in Handsome Tins with Chromographic Labels in four colours.



1 oz. tins, 3/-; 2 oz. tins, 5/6; 4 oz. tins, 10/- per doz. Tins lined with waxed paper and wrapped in transparent paper.

Customers' name and address on labels, if desired, free of extra charge, for orders of not less than three dozen.





Any variety of Pastilles can be supplied in these Ground Glass Stoppered Show Jars, each containing 7 lbs. Pastilles, 20,- inclusive.

Carlton Works, Asylum Road, LONDON, S.E. 15.

JULES DENOUAL & CO., Carlton Works, Asylum Road, LONDON, S.E.15.

MEDICATED LOZENGES, Etc.

			. P	er lb.
Aniseed				16
Antacid, Dr. R	oberts			2 6
				3.'-
Aperient	***			2,6
Aconite T.H.			•••	4/-
Ammon Chlor.	TH	•••		
Balsamic Cong	1.11.	• • •	•••	4 -
		•••	***	1,9
Bath Pipe			• • •	1.6
Benzoic Acid B	TT	• • • •	•••	3/-
,, ,, T	.11.	•••		3/-
Bismuth B.P.	11		· · · ·	3/2
, I				
1* 11			6 lbs. @	
	harcoal			2/6
, and So	oda			3/-
Bismuthated T	ablets			2 4
Borax T.H.				3,9
Black Currant	No. 1			4/-
,,	and Tai	nnin		4,/-
*1	and Tai Cayenn	e and 1	l'annin	4/-
Brownton Hoas	sital Ca	and I	D 6 C -	2,6
, •	13	No.	2	2/-
Bronchial Calomel ½ gr.	6 lbs. @	19;	I cwt. @	1,6
Bronchial		***		2,9
Calomel ½ gr.				3 -
,, Igr.		***	***	3/9
I gr 2 gr.			***	4/-
. 3 gr.		***		4/6
Camphor				3/-
O - 1 - 11 - A - 1 1 7	D			
Carbolle Acid i	3 P			2/_
Carbolic Acid I	3,P, 1 H	• • •	***	3/-
,, 1	Г.Н.		•••	3 9
Castor Oil	Г.Н.	•••	•••	3 9 2 6
Castor Oil Catechu T.H.	г.н.	•••		3 9 2 6 3/6
Castor Oil Catechu T.H.	г.н. 	•••		3 9 2 6 3/6 3 9
Castor Oil Catechu T.H. , B.P. Cayenne	г.н. 			3 9 2 6 3/6 3 9 2 6
Castor Oil Catechu T.II. , B.P. Cayenne Chalk	г.н. 		•••	3 9 2 6 3/6 3 9 2 6 3/-
Castor Oil Catechu T.II. , B.P. Cayenne Chalk	г.н. 			3 9 2 6 3/6 3 9 2 6 3/- 2/6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 m	r.H.			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/-
Castor Oil Catechu T.H. , B.P. Cayenne Chalk Charcoal Chlorodyne 2 n	r.H.			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 3/-
Castor Oil Catechu T.II, B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon , and I	r.H. Formali	 		3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 2,6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon and I Clove	r.H.	 		3 9 2 6 3/6 3/9 2 6 3/- 2/6 3/- 2/6 3/-
Castor Oil Catechu T.II. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon and I Clove Cocaine, 112 th g	f.H			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 2 6 3/- 5/-
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 m Cinnamon , and I Clove Cocaine, 1 th g	f.H			3 9 2 6 3 6 3 9 2 6 3 /- 2 / 6 3 /- 2 / 6 3 /- 5 /- 5 /-
Castor Oil Catechu T.H. B.P. Cayenne Charcoal Chlorodyne 2 m Cinnamon , and I Clove Cocaine, 1/12th g	f.H			3 9 2 6 3 6 3 9 2 6 3 /- 2 / 6 3 /- 2 / 6 3 /- 5 /- 2 / 6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 m Cinnamon , and I Clove Cocaine, 1/12th g Coltsfoot Cough A	r.H.			3 9 2 6 3 6 3 9 2 6 3 /- 2 / 6 3 /- 2 / 6 3 /- 5 /- 2 / 6 2 / 9
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon and t Clove Cocaine, 1/12th g Coltsfoot Cough A B.P. Cayenne Cough A B	r.H	 chocol		3 9 2 6 3 6 3 9 2 6 3 /- 2 /6 3 /- 2 /6 3 /- 2 /6 2 /6 2 /9 2 /6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon , and t Clove Cocaine, 1/12th g Coltsfoot Cough A , B , C	r.H Formali with	 chocol		3 9 2 6 3 6 3 9 2 6 3 /- 2 / 6 3 /- 2 / 6 3 /- 5 /- 2 / 6 2 / 9
Castor Oil Catechu T.II. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon and I Clove Cocaine, 1/2 th g Cottsfoot Cough A B Child's	r.H	 chocol		3 9 2 6 3 6 3 9 2 6 3 /- 2 /6 3 /- 2 /6 3 /- 2 /6 2 /6 2 /9 2 /6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon and the Clove Cocaine, 1/12th g Cottsfoot Cough A B Cough A Child's Cubeb T.H.	r.H Formali gr. white with Own	 chocol		3 9 2 6 3/6 3 /- 2/6 3/- 2/6 3/- 2/6 2/9 2/6 2/-
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon , and I Clove Cocaine, 1/12th g "Coltsfoot Cough A , B , Child's Cubeb T.H. Digestive Table	r.H Formali gr. white with Own			3 9 2 6 3 6 3 9 2 6 3 /- 2 6 3 /- 2 6 3 /- 2 /6 2 /- 2 /- 2 /- 2 /- 2 /- 2 /- 2 /- 2 /-
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon , and I Clove Cocaine, 1/12th g "Coltsfoot Cough A , B , Child's Cubeb T.H. Digestive Table	Formali Gr. white with Own			3 9 2 6 3/6 3/9 2/6 3/- 2/6 2/6 2/- 2/- 3/- 3/- 2/- 3/- 2/- 3/- 2/- 3/- 2/- 3/- 2/- 3/- 3/- 3/- 3/- 3/- 3/- 3/- 3/- 3/- 3
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon Cocaine, 1 tyle Cough A B B Cough A Chieb T.H. Digestive Table Cand Eucalyptus Oil	r.H			3 9 2 6 3/6 3/9 2/6 3/- 2/6 2/6 2/9 2/6 2/- 2/- 3/- 2/6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon Cocaine, 1 tyle Cough A B B Cough A Chieb T.H. Digestive Table Cand Eucalyptus Oil	r.H			$\begin{array}{c} 3 \ 9 \\ 2 \ 6 \\ 3 \ 6 \\ 3 \ 9 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 2 \ 7 \\ 2 \ 6 \\ 2 \ 7 \\ 2 \ 6 \\ 2 \ 7 \\ 2 \ 6 \\ 2 \ 6 \\ 2 \ 6 \\ 2 \ 6 \\ 2 \ 6 \end{array}$
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon Cocaine, 1 tyle Cough A B B Cough A Chelorodyne 2 n Cottsfoot Cough A Cough A	Formali Gr. white with Own ets			$\begin{array}{c} 3 \ 9 \\ 2 \ 6 \\ 3 \ 6 \\ 3 \ 9 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 3 \ 7 \\ 2 \ 6 \\ 2 \ 7 \\ 2 \ 6 \\$
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon Cocaine, 1/12th g Cottsfoot Cough A B Child's Cubeb T.H. Digestive Table Cand Eucalyptus Kir Formalin	C.H.			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 2/6 2/- 2/6 2/- 2/6 2/6 2/6 2/6 2/6 2/6 2/6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 in Cinnamon Cocaine, 1/12th g Cottsfoot Cough A B Child's Cubeb T.H. Digestive Table Cand Eucalyptus Kir Formalin	C.H.			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 2/6 2/- 2/6 2/- 2/6 2/6 2/6 2/6 2/6 2/6 2/6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon Cocaine, 12th g Cottsfoot Cough A B Child's Cubeb T.H. Digestive Table Cucalyptus Cind Eucalyptus Kir Formalin 28	C.H. formali gr. white with Own ets and Meno B.P B lbs. @			3 9 2 6 3/6 3 9 2 6 3/- 2/6 3/- 2/6 2/9 2/6 2/6 3/- 2/6 3/- 2/6 3/- 2/6 3/- 2/6 2/6 2/6 3/- 2/6 2/6 2/6 2/6 2/6 2/6 2/6 2/6 2/6 2/6
Castor Oil Catechu T.H. B.P. Cayenne Chalk Charcoal Chlorodyne 2 n Cinnamon and I Clove Cocaine, 1/12th g Cottsfoot Cough A B Chlorodyne 2 n Cottaine, 1/12th g Cottsfoot Cough A Cough A Cough A Cough A Cubeb T.H. Digestive Table Cand Eucalyptus Cil Formalin 28 and Cin	C.H			$\begin{array}{cccccccccccccccccccccccccccccccccccc$

			Per lt
Formalin Tablets	•••		2/4
Gelatine	•••		3/6
Guaiacum B.P		• • •	3/4
" Т.Н	•••		3/4
Ginger, Super ·		** 1	2/6
Heartburn	•••		3/-
Horehound	• • •	• • •	2/6
Indigestion Tablets		• • •	2/6
I pecacuanha B.P	• • • •		2/6
Kino T.H	• • •		3/-
Lavender	**:	• • • •	2/6
Logwood T.H Lettuce T.H	•••	•••	2/3
Lime Juice and Sulph	•••	• • •	3/-
56 lbs. @			1/6
Linseed, Licorice and	Chlorod	TIDO	
28 lbs. @ 1/8; 56 lbs			1,9 @ 1/6
Magnesia			2 6
Menthol	•••		26
Menthol ,, and Eucalypti	10	·	2/6
,, and Cocaine	45		3/-
Morphia B.P			4/-
			4/-
Musk No. 1 Norwegian Pine Tar			2/6
Norwegian Pine Tar			2/6
Paregoric			2.6
Paregoric Pot Chlor. B.P			2'-
" Т.н			3/-
,, T.H ,, and Borax	T.H.		3/-
Pot Citrate T.H			3/-
Peppermint, Bijou			3/-
" Curiously	Strong		,
	J. D. &		3/-
., C.S. No.	I		2/6
Extrá			2,3
l'epsin			3/-
Pine Oil ,, Tree, J. D. & Co			2/6
,, Tree, J. D. & Co			2/6
I cwt. @	2/2; 5	6 lbs. @	
Red Gum B.P. (Eucal	yptus K	ino)	3/-
" J. D. & Co. " T. H Rose No. 1	• • •	• • •	2/6
", Т. Н	***	• • •	3/-
Rose No. I	• • •	• • •	2 6
Reduced Iron B.P. Rhatany B.P	• • •	• • •	3/-
Knatany B.P	<	• • •	3/-
		* * *	3/-
Phybarh	D.I.		4/-
Santonino B.D. Lory	• • •		2/6
,, and Cocaine Rhubarb Santonine B.P., ½ gr.)	At lov	vest	
I gr.	current	prices.	
Sedative T.H			3/-
Soda and Bismuth		***	3,-
,, Mint			26
Sponge			3/-
Sulphur B.P		•••	2/-
1 cwt. @ 1/6; 56	lbs. @ 1		
28 lbs. @	1/8; 1	4 lbs @	2 1/9
			1

			I	er lb.
Sulphur, Garro	od			2/-
I cwt. @ 1/	6; 561	bs. @	1/7;	
28	lbs. @	1/8;	4 lbs. @	1/9
Sulphur Tablet	s			1 6
ı cwt. @ 1	/-; 561	bs. @	1/2;	
			28 lbs. @	1/4
Tannin B.P.				3/-
", Т.Н.				3/-
Terebene				3/-
Thymol		,		3 -
Tolu				2/6
Voice				2/6
Worm				2/6
				'

True Floral Cachous.

Aromatic		\	
Carnation			ó
May Blossom			=
Eau de Cologne			per lb. lb.
Ess Bouquet			r 1
Frangipanni			2/6 p
Heliotrope			က
Hyacinth			2/3
Jasmine	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	hape 28 lbs., per lb.
Jockey Club			Shape 28 lbs 2 per lb
Lavender	•••	[12 28 19 19
Lilac		[2 2
Lily of Valley		1	
Millefleur		• • • •	—Hear per lb. I cwt
	• • •		
Musk	• • •		pe I
Opoponax	• • •	•••	lity-
Parma Violet		• • • •	
Rose			Qu:
Stephanotis			
Sweet Pea			Finest 14
Violet			ne
Wallflower			:
White Heather		/	

Licorice Pellets (Cushion Shape).

Licorice Licorice a		28 lbs. @ 3/9 28 lbs. @ 3/9	Per lb. 4/- 4/-
71	. 11	I oz. tins	Per doz. 4/6 Per grs.
51	19	smaller	

Packed Lozenges.

				Per	doz.
Brompton	Chest and	Lung.	I oz. ti	ns	3/6
5.9	*1	15	2 oz.	11	5/-
Curiously S					
Compound					
Pine Tree I	Lozenges J.	. D.& Co	. 2 oz.	. 1	4/8

JULES DENOUAL & CO., Carlton Works, Asylum Road, LONDON, S.E. 15.

J.D. BRAND CAPSULES AND PERLES.



J. D. QUININE AND CINNAMON PERLES. 10/- per doz. J. D. Capsules and Perles do not shrink nor contract. They retain their flexibility for any length of time, and are always readily soluble. The purity of the drugs employed and the correct quantity as indicated are guaranteed. They are specially prepared for export and keep well in all climates.



J. D. SANDAL OIL CAPSULES.
24 × 10 m. Capsules in each box, 25/6 per doz.

NAME AND STRENGTH.	Per doz.	boxes of	Per 1000	NAME AND STRENGTH.	Per doz.l 24	boxes of 36	1000
Apiol, 3 min	8 6 14 0 21 6 7 6 4 9 5 0 5 3 5 3	12 6 20 0 31 0 10 0 6 0 6 6 6 9	26 0 42 0 70 0 20 6 10 0 10 6 11 0 11 6	Guaiacol I min,	8 0 10 0 6 0 7 6 9 0 11 0 8 3	11 0 15 0 8 0 10 0 12 6 15 0 10 9	20 0 30 0 14 0 18 0 23 0 30 0 19 0
., 2 Pill , , , 1, 2 or 3 min. , 2 or 3 min.	5 6 5 9	7 3 7 6	12 0 12 6	Ext. Cascara Sag. 1/8 gr. Nucis Vom. 1/12 gr. Acid Arsenious 1/120 gr.	7 0	9 6	17 0
, I Pill ,, ,, I min. Strychnine I/Ico gr.	5 9	7 6	13 0	Male Fern Extract B.P. 5 min. 4 0 5 0 7 6	9 0 11 6	11 3 16 0	18 0 32 0
, 2 Pill, Liq. Arsenicalis 2 min. Strychnine 1/50 gr.	6 3	8 0	13 6	,, 15 min. 6 0 9 0	16 0	23 0	46 0
3 Pill. Liq. Arsenicalis 2 min. Strychnine 1/50 gr. 2 Pill, Liq. Arsenicalis 2 min. Ext. Nucis Vom. \(\frac{1}{2}\) gr.	8 6	8 3	14 0	Olive Oil 10 min	21 0 5 6 6 0 7 6 8 6	29 0 7 6 8 0 10 0 11 6	60 0 12 0 13 0 17 0 21 0
Phenolphthalein \(\frac{1}{2}\) gr. in 100s. \(\frac{2}{7}\) fer 100 2 Pill, Liq Arsenicalis 2 min. Ext. Nucis Vom. \(\frac{1}{2}\) gr. Phenolphthalein \(\frac{1}{2}\) gr. in 10cs. \(\frac{3}{2}\)'- per 100		!		Quinine Ammoniated 30 m.n. Tircture I dram Quinine 1 gr. Cinnamon Oil 1 min	6 6 8 6 10 0	8 6 11 9 14 6	15 0 22 6 30 0
Cascara Sagrada Liq. Extract 30 min Castor Oil 10 min	7 6 5 6 6 0 7 0	10 0 7 0 8 0 9 6	16 0 11 0 12 0 14 0	,, ,, Standard Size 8 min.	10 0 13 6 19 6 25 6	14 6 19 3 28 0 37 6	30 0 40 0 60 0 82 0
", ", 30 min	8 3 5 9	10 6 7 6	20 0 10 0	Santal, Cubebs & Copaiba 10 min Terebene 10 min	11 0 8 6	15 0 11 9	32 0 22 0
,, 15 min	6 9 8 0 10 0	9 0 10 9 12 6	12 0 16 0 18 6				
Copaiba Balsam 10 min	6 6 5 3	8 6 6 9	13 6 9 0	SOLUBLE PERLES.			
, 2 min	6 6 7 6 8 9	8 6 9 0 11 0	11 0 14 0 18 0	Santal Oil East Indian B.P. 3 min 5 min		15 0 19 3	28 0 40 0

Customer's name and address printed free on 3 dozen assorted lots.

TERMS for Home Trade.

Payment .- Net monthly account.

Delivery.—Carriage paid on all orders of £3 and upwards in Great Britain and Ireland.

TERMS for Export.

Payment.—Against our draft at 60 days after sight, subject to approval of references.

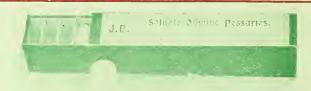
Delivery.—F.O.B. London.

When ordering through your Wholesale House specify "Denoual's."

JULES DENOUAL & CO., Carlton Works, Asylum Road, LONDON, S.E. 15.

COMPRESSED TABLETS.

		Per de	oz. bottle:	s each.
	Per lb.	25'S	50's	100'5
Aspirin 5 gr	6/6	3/6	5/3	8/3
Bismuthated Magnesia	2/4		6/6	-
Chlorate of Potash 5 gr	2/-	2/9	3/9	4/6
Formalin Mint	2/4		6/6	
Soda Mint	1/2	2/9	3/9	4/6
Sulphur	1/6	_		<u>:</u>
Pine Compound	2/4	Decorate	d tins, 3	6 doz.
Saccharin o 3 gr. 550	50/-			
	100's.	200's.	500's.	I,000's.
" per do	z. 10/-	20/-	46/-	90/-



J. D. SOLUBLE QUININE PESSARIES.

14/- per dozen boxes

CHOCOLATE WORM CAKES.

P J F 3719. Tinfoiled and wrapped, 12'- per gross.

BISMUTHATED MAGNESIA TABLETS.

'(ANTACID.)

Each Tablet contains—Carbonate of Bismuth, 1 gr.; Carbonate of Magnesia, 5 grs.

Packed in screw-cap bottles, each 50 tablets.

per 6/6 doz.

In bulk, 2/4 per 1b.

CINNAMON AND FORMALIN LOZENGES.

Screw-cap bottles, each 50.

per 6/6 doz.

In bulk, 2/6 per 1b.

INDIGESTION TABLETS.

Containing Pepsin, Bismuth and Pancreatin.

per 6/6 doz.

Screw-cap bottles, each 50 tablets.

In bulk, 2/6 per lb.

FORMALIN THROAT TABLETS.

The popular antiseptic for preventing infection from Diphtheria, etc.

In screw cap bottles each 50 × 15 grain tablets.

per 66 doz.

In bulk 2/4 per lb.



CURIOUSLY STRONG PEPPERMINT LOZENGES.

J. D. & Co.

I oz. decorated tins, 4/- per doz.



PINE TREE LOZENGES.

J. D. & Co.

2 oz. tins, 4/8 per doz.

PLATYPUS BRAND EUCALYPTUS GLOBULUS OIL.

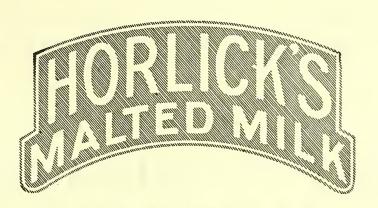
It is the only Oil on the market upon which positive reliance can be placed for absolute constancy of quality, and for that reason alone is well worth the extra price. Globulus Oil cannot be made at the same price as the common Australian Mallee Oil. The leaves produce less oil and are more difficult to obtain, but its medicinal value is much higher and -it contains no irritants.



	PRICES	IN	BULK.		
I lb. Bottles			**		3/6 per lb.
5 lb. "	'				3/5 ,,
10 lb. Tins		• • •			3 3 ,,
		• • •		3	
II2 lb. ,,	• • • • • • • • • • • • • • • • • • • •	• • •	***		3/,
BOTTLED	AND PACKE	D IN	ELEGANI	CART	ons.

Wholesale Agents:
JULES DENOUAL & CO.,
Carlton Works, Asylum Road, S.E. 15.

When ordering through your Wholesale House specify "Denoual's."



MADE IN ENGLAND.

The Sale of Horlick's Malted Milk—the Original—is and always has been directed through Chemists, while substitutes and imitations are often exploited through other Trades.

The Price is Protected.

Attractive advertising material for Window Display and Counter Distribution free and carriage paid on application to the Company.

HORLICK'S MALTED MILK CO., slough, bucks, england.

You Cannot Buv Better

Ask for Samples and Prices

Jeffreys, Miller & Co., Ltd.,

MALT EXTRACT MALT & COD LIVER OIL

Also packed in Attractive Containers with Client's Own Name & Address.

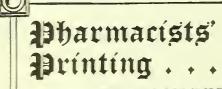
Jeffreys, Miller & Co., Ltd., Leyland Mills, Wigan.

MASON'S EXTRACT **HERBS**

Special WINDOW SHOWOffer Chemists for month only.

Asolu

VBALL & MASON NOTTINGHAM.



OF EVERY DESCRIPTION EXECUTED PROMPTLY & EFFICIENTLY. THE BEST QUALITY WORKMANSHIP AT THE MOST MODERATE

Mendleton. Manchester





Prepared in strict accordance with the Formula of the British Pharmacopœia.

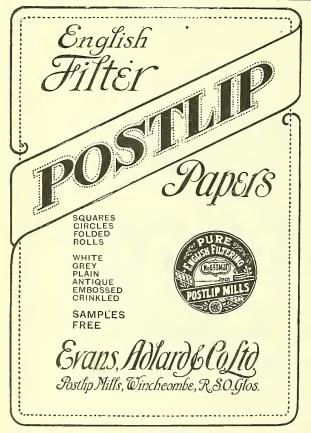
A. MILLAR & CO.

DUBLIN

Wholesale Only.

London Agent: W. Brydon, 74 Great Tower Street, London, E.C. 3





SEITZ ASBESTOS FILTERS

For Pharmaceutical Purposes.

SPECIALLY SUITABLE FOR

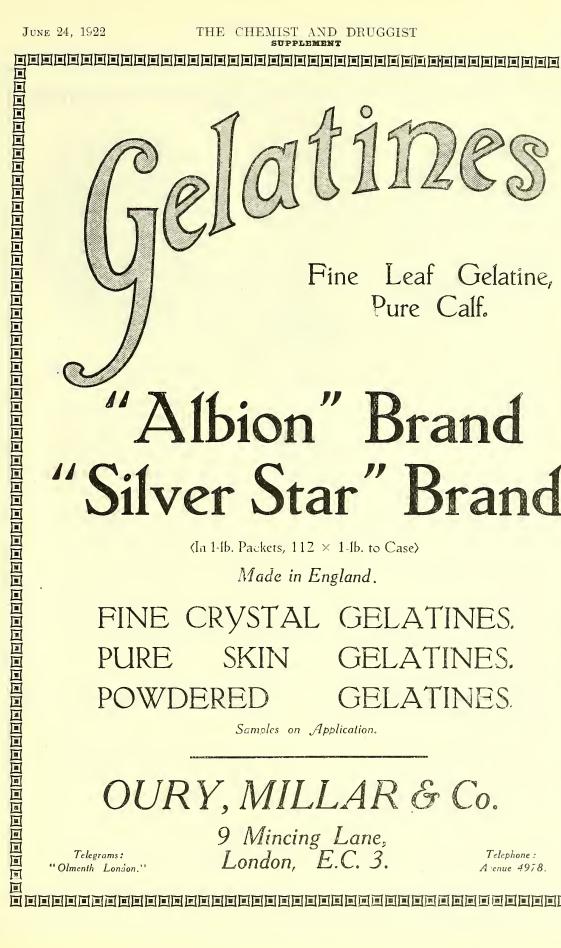
SPIRIT PREPS., SYRUPS, ETC.

With preparations such as Concentrated Infusions, where filter pulp fails, the SEITZ produces at once a brilliant filtrate.

ILLUSTRATED CATALOGUE FROM

ERNEST J. KAYE & CO., 54 Cheapside, London, E.C. 2.





Leaf Gelatine, Pure Calf.

Albion" Brand "Silver Star" Brand

GELATINES.

OURY, MILLAR & Co.

Telephone: A senue 4978.

A SATISFIED CUSTOMER IS THE CHEMIST'S BEST ADVERTISEMENT

The Marvel Whirling Spray Syringe



Gold Medal Awarded, Paris, 1902, by the Société d'Hygiene of France

as the latest and best improvement in Vaginal Syringes. Particular attention is called to the fact that by reason of its peculiar construction the Marvel Syringe dilates and flushes the vagina with a volume of whirling spray, which smooths out the folds and permits the injection to come into contact with and cleansing the entire surface.

Fully Protected by Patents.







You can safely recommend it.

Has no rival on the market, is well advertised, pays a good profit, quality guaranteed. The MARVEL is returnable for exchange if found defective and reported promptly.

Trade price, 125/- per doz. Retail price, 15/- each.

FASSETT & JOHNSON, Ltd. 86 Clerkenwell Rd., London, E.C.1.

Trade Mark Hollandia

RUBBERFABRIEK HOLLAND VELSEN, HOLLAND

Trade Mark
R "Stork" F
H

TEATS, SOOTHERS, RUBBER GLOVES, SURGICAL RUBBER GOODS
Samples and Quotations gladly sent by ENGLISH REPRESENTATIVE, 35 NEW CAVENDISH STREET, W.1.

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Waterproof Papers, Gummed Paper Tapes, etc. etc. ENQUIRIES SOLICITED.

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Telephone: 2112 Stockport.

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MAGNIFYING FRONT. NATIONAL PHYSICAL LABORATORY GUARANTEE, EASY TO READ. EASY TO SHAKE DOWN.

This series is the only Clinical Thermometer on the

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AN ADEQUATE MARGIN OF PROFIT BEING GUARANTEED

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PRICES OF THE "MATER" CLINICAL IN METAL CASES:-2 min., 4/6; 1 min., 5/6; $\frac{1}{2}$ min., 7/- each. Wholesale ,, 27/-; " 33/-; " 42/- per doz.

PERKEN, SON & CO., Ltd., 94 HATTON GARDEN, LONDON, E.C. 1.

Established 1852.

Telephone: 724 Holborn.

Contractors to H.M. Government.

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are a reliable swimming device that will bring you EXTRA SALES during the SUMMER MONTHS in all districts possessing bathing facilities.

No awkward sizes to stock—no changing fashions to study. Stock occupies little space and does not deteriorate. No waste—No packing costs. MADE IN TWO STYLES—Plain tints (assorted). Butterfly Wing (full colours).

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Best Quality English White Glass

SPECIAL OFFER 1 Gross sent Carriage Paid for 42/-Special quotations for larger quantities.

Cheapest house for DISPENSING BOTTLES Good Stock of all kinds.

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GOODS WELL ADVERTISED ARE HALF SOLD.

- There are two reasons for the enormous sales of "Fairy Dyes." One is inside the packet—the One is inside the packet—the goodness of the Dyes—their reliability and their low cost. The other is that we spare no effort or expense to advertise them well.
- In every leading Ladies' Weekly and Monthly throughout Great Britain, clever "copy" and striking illustrations are convincing the public of the superiority and economy of using "Fairy Dyes" and no others for every home need.



- C. Do you want to increase your sales, your repeat orders, your turnover, with a dye that is easy to sell because it is so simple and so easy to use? There is a choice of twenty-two shades suitable for cottons, woollens, linens or silk, and already "Fairy Dyes" are recognised to be most reliable and economical.
- C. Send us your order now. It is too late when you learn that your competitor has been doing great business with "Fairy Dyes," for the demand for "Fairies" is already very great and growing, and the man who has them in stock is the man who scores. The selling price is 2d. per packet and the public want them from you.

FAIRY DYES,

Regd. Office: 37/41 GLASSFORD STREET, GLASGOW.

Telegrams: "Fairyland Glasgow." Phane: 2423 Bell.

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WM. WARNE & CO. LTD. INDIA-RUBBER

MANUFACTURERS.

Best Quality



MARK

Manufacturers of every description of

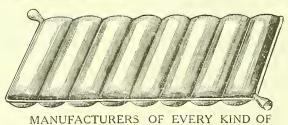
SURGICAL. CHEMICAL. SPORTS GOODS. DOMESTIC. VETERINARY. and MECHANICAL ARTICLES. SYRINGES. ENEMAS.











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WHOLESALE AND EXPORT ONLY

To be obtained also from the Druggists' Sundries' Houses.



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WATER BEDS and CUSHIONS. THREAD. HOSE, TUBE, TOBACCO POUCHES. MATS, BANDS, WATERPROOF GARMENTS. &c.



THE CHEMIST AND DRUGGIST SUPPLEMENT

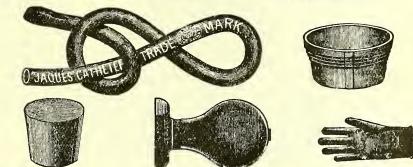
WM.WARNE & Co.Ltd. WM INDIA - RUBBER

MANUFACTURERS.

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Manufacturers of
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and
MECHANICAL
ARTICLES,
SYRINGES,
ENEMAS,





water beds
and
cushions,
thread,
hose, tube,
tobacco
pouches,
mats, bands,
waterproof
garments,
&c.





Manufacturers of every description of INDIA-RUBBER

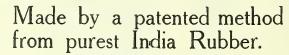
29 GRESHAM ST., LONDON, E.C.2



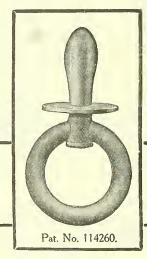
WHOLESALE AND EXPORT ONLY.



This method of packing is far superior to the unhygienic card.



It is without taste or smell; it is practically indestructible, and the shield is guaranteed not to pull off with ordinary use. The most perfectly made all-rubber soother ever offered for sale.



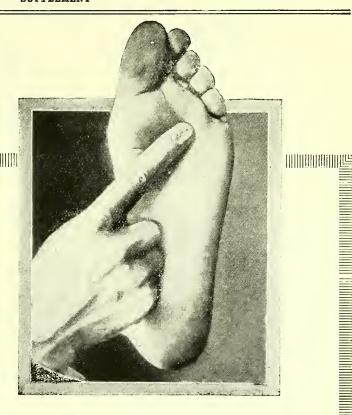
Ask your Wholesale House for the "SIMPLIC" Soother











Display Scholl Goods

The "Scholl" National Advertising Campaign is giving a tremendous impetus to the sale of "Scholl" "Scholl" dealers everywhere are greatly increasing their profits and turnover as a direct result of linking up their windows with the continuous flow of "Scholl" advertisements that are appearing in the leading newspapers and periodicals.

Dr Scholl's Foot Comfort Appliances

enable you to give instant relief and permanent correction to every type of foot trouble. They are anatomically correct and constructed from only specially selected materials. Throughout the world "Scholl" Appliances have received the approval of the medical profession. By featuring them strongly in your windows you will bring bigger business to your store.

Write to-day for full particulars.

THE SCHOLL MFG. CO., LTD.

1-4 Giltspur Street, London, E.C. 1.



The superiority of the Nestlé Feeding Bottle is so obvious that doctors are advising it, nurses are recommending it and mothers insist on having it. Nothing is good enough for their little ones but a bottle which is perfect in hygienic construction; which cannot possibly harbour dirt or disease germs and which ensures that the food is taken without undue effort or excessive air.

Nestle's Feeding Bottle is constructed throughout on scientific principles, it is impossible for the child to detach the teat and rubber valve which automatically cling and are made from pure plantation rubber. Colic is prevented because the flow of air behind the milk is systematically regulated. The feeder, made of virgin glass, can be tilted to and will remain at any desired angle. Its capacity is 10-oz., and every part, including the box, is thoroughly sterilized before leaving the factory

The Cheapest full-sized Feeding Bottle on the Market.

Easy to sell; brings good profit and rapid turnover. Write to-day for full details and current trade price list.

NESTLES 6-8 EASTCHEAP.

(Advert. Dept.), LONDON, E.C. 3.

AND DRUGGIST

SPORT OF CURASOL

THE ORIGINAL

Boracic Socks

Fixed Selling Price, 6d. per pair.

Cost, 4/- per dozen.

Six dozen lots, 46/- per gross.

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For Sample Pair (state size) send Postcard to—

The Curasol Sock Co.

19/20 Garlick Hill - LONDON, E.C. 4.

DOWN OF OR OTHER CONDON, E.C. 4.

DOWN OF OTHER CURASOL SOCK CO.

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SURGICAL APPLIANCES Of All Kinds.

We are actual makers of various Health Appliances, including the "Prorace," and others referred to in Dr. Marie Stopes' book, "Wise Parenthood," etc. Terms cn application.

LAMBERT, SON & WATKINS

Druggists' Sundriesmen,
60, 62 & 64 Queen's Road, Dalston,
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EXCELSIOR CREPE BANDAGES. FAST EDGE.

EXCELSIOR



GIMBER'S EXCELSIOR CREPE BANDAGE

CREPE BANDAGE

An Elastic Bandage, containing no Indiarubber. Superseding Elastic Stockings, Webs, Bandages, and at half the cost. Three sizes, about 2, 2½ and 3½ inches wide. Excelsior Crepe Abdominal Binders—useful after many abdominal operations, and for ladies after confinements. Two sizes: 8 & 11 in. wide. CAUTION—Beware of fraudulent and usele: simitations, and reject all Bandages not bearing the above Trade Mark on the Wrappers.

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W. GIMBER & SON, Sprzical Bandages and Instrument Makers, And of all Wholesale Druggists, Chemists, Surgical Instrument Makers, &c. Telephone: New Cross 1601. Descriptive Circular'and Price List on application.

Established 1833.

Telegraphic Address: "Appliance Nottingham."

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J. H. HAYWOOD Ltd.

Surgical Appliance Manufacturers, Castle Gate, NOTTINGHAM.

Inventors of Seamless Elastic Hosiery.

SPECIALITIES.

ABDOMINAL BELTS for support and after TRUSSES, Spring or Elastic, operation. SUSPENSORY BANDAGES.
CHEST-EXPANDING BRACES.
ELASTIC WOVEN BANDAGES.
APPLIANCES for DEFORMITIES.
ARTIFICIAL LIMBS.
PORO-PLASTIC JACKETS

PORO-PLASTIC JACKETS.
INVALID and NURSING
REQUISITES.

WATER and AIR-PROOF GOODS and all DRUG-GISTS' SUNDRIES

PRICES ON APPLICATION.

There's a Constant and Steady Demand

for all cases in which elasticity, adaptability and support are needed for

NORVIE CRÊPE BINDERS

All widths up to 11 inches.

Ask your wholesaler for them.

Sole Manufacturers: &

GROUT & Co., Ltd.
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35 Wood Street, E.C.2.



GENERAL SURGICAL CO. LTD.

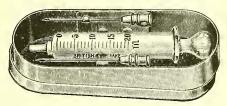
Established 1890

WHOLESALE & EXPORT ONLY.

Actual Makers of Hypo. and Serum Syringes Surgical and Veterinary Instruments and Sundries. GLASS BLOWING, GRINDING AND GRADUATING A SPECIALITY.

NOTHING TOO DIFFICULT

FOR US TO MAKE FOR YOU.



" ALL GLASS' Hypo. and Serum Syringes



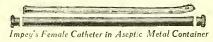
"TUFFIERS" Urethral Syringe

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FROM THE
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SURGICAL
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"ASTRA" Nasal Douche





STOPCOCKS and every description of Glass

Apparatus for Analytical and Bacteriological Work.

We invite your inquiries for any Glass
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All the inconveniences of the old-type bandages have been scientifically eliminated in

THE LEICESTER

PERFECT

PLASTER OF PARIS BANDAGES

which are non-absorbent, non-gritty, and wonderfully smooth and even in application.

They are
the Original on
which the
NEW B.P.C.
STANDARD BANDAGE
is based.



Single Bandages
in Round
Tins.

½-dozen Bandages in Square Tins.

HEY look like stiffened open-wove cotton, and they are just as clean and easy in application. They were the ORIGINAL Plaster of Paris bandages in which the plaster was made adherent to the bandage, and are still the best to-day.

C,The application of "The LEICESTER" Plaster of Paris Bandages is simplicity itself—their efficiency unaffected by climatic conditions. All that is necessary is to soak the coiled bandage in water, squeeze out the excess of moisture and bind the fracture as with an ordinary bandage. The "setting" properties are purposely slightly retarded to allow the surgeon adequate time for manipulation, but in ½ to ¾ of an hour "The LEICESTER" Bandage makes a beautifully smooth firm case. The A first favourite among Doctors and Hospital Authorities everywhere "The LEICESTER" Bandages are particularly advantageous to Country and Colonial practitioners, owing to their remarkable "keeping" qualities, and they are equally satisfactory when cut up and used in small pieces.

Obtainable from all Wholesale Druggists, Surgical Instrument Makers, Druggists' Sundriesmen, etc.—or direct from the Sole Manufacturers:

A. de ST. DALMAS & Co., Leicester

Contractors to H.M. Government.

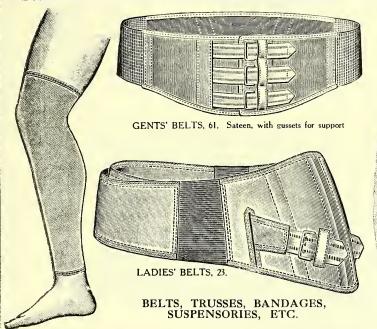
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Established 1823.

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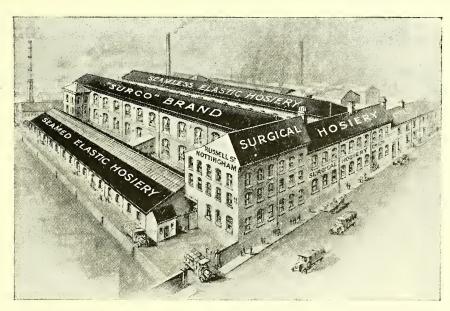
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ARE ALWAYS RELIABLE





HOLD-UP BRACE, 75. For Ladies or Gents.



WINDOW SHOW LEG & STOCKING 12/6, WITH KNEE LEGGING 14/6. A GOOD ADVERTISEMENT TO HAVE IN YOUR WINDOW. Post Free.

Write for Catalogue and a supply of measurement forms free.

SURGICAL HOSIERY CO., Ltd. RUSSELL STREET, NOTTINGHAM

Regd. Trade



Mark, No. 26866.

BEST FEEDER



Made in Neutral Glass of High Thermal Endurance, with CHEMIST'S NAME AND ADDRESS and the graduations in

SANDBLASTED LABEL

of excellent design and execution.

No particles of sour milk or impurity can lodge inside the Feeder as the interior is absolutely smooth.



Best

BEST

FOR THE BABY

who has it, because it is the most hygienic.

BEST

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who buys it, because it is the most easily cleansed and is not liable to crack with hot liquids.

BEST

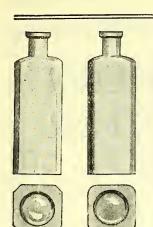
FOR THE CHEMIST

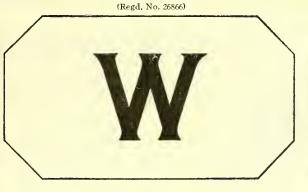
who sells it, because it bears his name and is a constant advertiser of his business in the family circle.

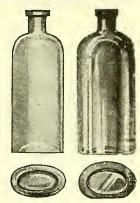
In one gross lots and upwards through your Druggists' Sundriesman.

WOOD BROTHERS GLASS COMPANY, LTD., BARNSLEY, ENGLAND.

Established 1828.





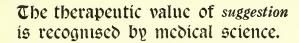




Dispensing Bottles

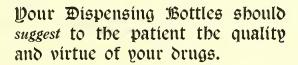












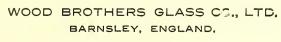




In ten different styles and in full ranges of sizes and graduations. Lettered with Chemist's name and address if so required.



Obtainable through all the leading dealers.



Established 1828.





Patent Air Tight Slip-lid Tin For Export.

Tight Seaming and Varnish Bottles a Speciality.

THE NORTHERN TIN CANISTER WORKS.

Manufacturers for the Chemical Trade.

Deliveries Prompt Assured.

MERSEY STREET, LIVERPOOL.

Telephone: Bank 3433.

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LABELS for Perfumery of all kinds.

Large selection of Stock Designs.

DOUIN & JOUNEAU, 3 Rue Papin, PARIS (France). LONDON Agent: S. R. SMITH, 26 Silver Street, Wood Street, E.C. 2.

The NORTH LONDON TINWARE Co., Ltd.

Crondall Street, Hoxton, LONDON, N.1

Manufacturers of

TIN BOXES and CANISTERS FOR INFANTS' FOOD, PETROLEUM JELLY, AND OTHER ARTICLES. Round and Square TIN BOTTLES, PLASTER CASES, &c.

Cardboard Boxes and Composite Containers.

Telephone: 2466 Central.



NAPPER & DAVENPORT

7-11 St George's Place BIRMINGHAM

PRODUCERS OF BETTER CLASS CONTAINERS and FITTINGS for MANUFACTURERS of TOILET and SIMILAR PREPARATIONS

YOUR OWN IDEAS CARRIED INTO PRACTICE

SCREW CAPS & SMALL ROUND BOXES

IN ALUMINIUM NICKELLED ZINC

OTHER METALS

TUBE CLIPS



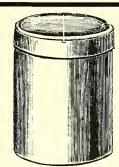
minium Ointment Boxes

Fill the gap between the chip box and the porcelain pot. Try an assorted dozen.

You will find them just what you want.







To hold 1-oz., 15/6

1-oz., 18/6

Hundreds of orders for these boxes have already been received from chemists everywhere.

TOOTH BRUSHES.

						per-	doz.						p	er d	oz.
No.						s,	d.	No.						6.	d.
700	Bone handl	e, assrtd.	shapes	, 4 1	rows	6	0	708	Celluloid	handle,	curved	3 r	rows	5	0
701	,,	,,	,,	4	,,	7	0	704	,,	,,	straight	3	: ,	6	0
702	"	slotted	back	4	,,	8	0	707	"	•,	,,	4	,,	7	6

COMBS. DRESSING COMBS. LADIES'

				per doz.			per doz.
No.			ins.	s. d.	No.		ins. s. d.
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121	,, ,, burr	grailed 7	$\frac{1}{2} \times 1\frac{1}{4}$	7 6	287 Black galalith		$7\frac{1}{2} \times 1\frac{3}{4}$ 18 0
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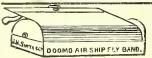
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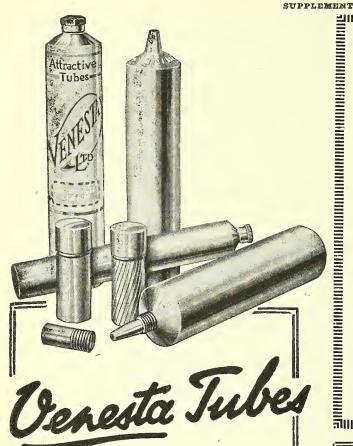
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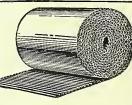
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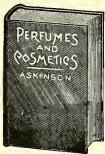
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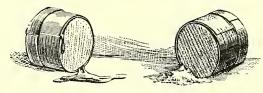
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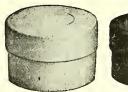
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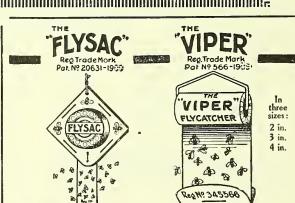
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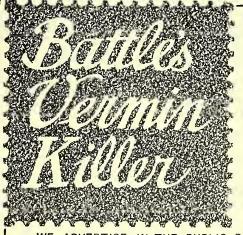
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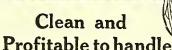
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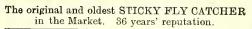


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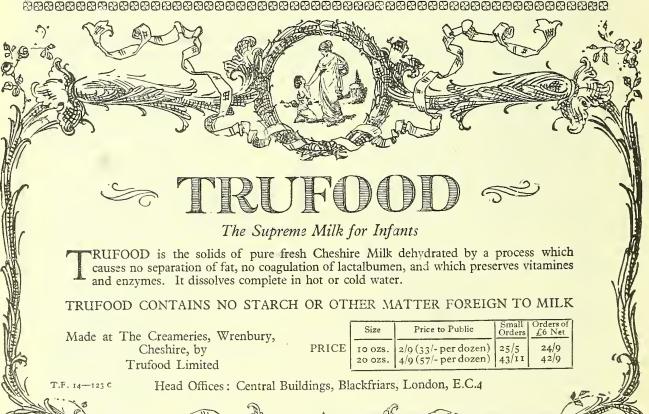
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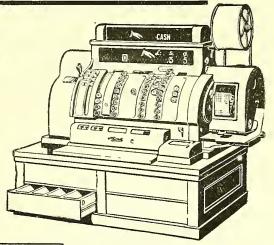
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GREAT YARMOUTH.

1. Front of Ticket.

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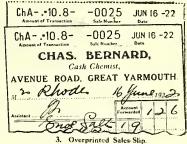
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2. Back of Ticket.





021 17 9½ cash

Proprietors Grand Total,



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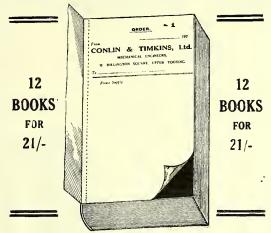
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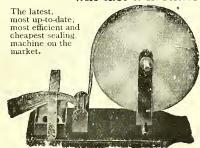
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